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**The Educational Impacts of the Boyne River Natural Science
School: Twenty-Five Years Later**

by

Roy George Cumming

B.A. Wilfrid Laurier University 1981

Thesis

Submitted to the Department of Geography
in partial fulfillment of the requirements
for the Masters of Environmental Science degree
Wilfrid Laurier University
1998

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Abstract

This paper examines how one or more visits to the Boyne River Natural Science School operated by the Toronto Board of Education affects students' environmental attitudes and behaviours. It also looks at what effect these visits had on their perceptions about the environment and whether the program was important in their personal and educational development.

The study surveys students who attended the Boyne River Natural Science School between 1973 and 1986. Effects were measured by means of a short questionnaire.

From this time period 125 students filled out the questionnaire, with the gender breakdown being 65 females and 60 males. All years from 1973 to 1986 were represented, as were all grades from Grade 4 to Grade 13.

The results indicate a very high degree of success for the program. The school's aims for the students and the program were met at a high level, as indicated by the very positive responses given in the questionnaire. The results of the surveys showed a very high degree of satisfaction from the respondents. An astounding 99% of the respondents found satisfaction with the program.

The study found that the environmental education program at the Boyne River Natural Science School had major and long lasting educational impacts on the participating students.

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CHAPTER ONE

INTRODUCTION

Statement of the Problem

The purpose of this thesis is to study the long-term effects of a visit or visits to the Boyne River Natural Science School (hereafter referred to as Boyne River School), on people that attended between 1973 and 1986. It has always been argued that a visit to the Boyne River School, an outdoor education centre, has a very beneficial long-term effect on students, but as yet there is little empirical data to support this contention. This statement has been made of outdoor education in general but as James Raffan stated "Outdoor education did all kinds of good things for students and for the environment, and for schools, but when push came to shove and we were asked to go beyond bald assertion and to prove these claims we came up empty-handed." (Raffan 1996: 8) In a time of increased accountability for all school programs, it is necessary to evaluate all programs to ensure that they are doing what they were designed to do and to find out if they need any revision.

The Value of Outdoor Education

At the present time the Council of Outdoor Educators is making submissions to various expert panels within the Department of Education on the value of Outdoor Education. What are some of these values? “Outdoor education experiences are essential components of a child’s education and help build solid foundations for future learning” (Whitcombe 1997). “The opportunities to live and learn together in a residential outdoor education centre provide a unique and lasting experience for science students and their teachers that cannot be duplicated within the walls of the classroom” (Harrison 1997). The outdoor experience allows students to learn in real life situations that do not have to be transferred to the ‘real world’ (Harrison 1997).

Outdoor education allows the teacher to put many students into an unknown situation that is challenging, scary, as well as interesting to them, thus increasing their learning (King 1997).

Teachers who bring their students to the school talk about the effects on the social aspects of the student’s lives. The students get to see their teachers in a different light when they live with them twenty-four hours a day. The teachers tell of the friendships that develop during the class stay at the centre; they also tell how students of different nationalities get to know each other better and how prejudices are broken down. These teachers state that, in a short time at the centre, they see the students develop. Students become more responsible as they are put into situations where they must make their own bed, set a table for a meal and look after their

own clothing and dress appropriately for the weather, in many cases for the first time. Their inter-personal skills often improve as a result of living in a dorm with thirty other students.

As a teacher at the Boyne River School, the author has had the opportunity to see this happen week after week. He has also heard from the home room teachers how amazed they are by the behaviour of some of their students, sometimes some of the students who are difficult to teach in the regular classroom!

These teachers saw their students learn new outdoor skills. In some cases this led to a lifetime recreational skill and enjoyment of nature for these students. In learning these new skills, the students met new challenges and overcame their fears as well as learning to laugh at their own short comings.

The visit can also have an impact on the students' environmental attitudes and behaviour. In some cases, it can also affect the students' educational development, one of their few opportunities for success in a situation that is not threatening and is much different from that found in the normal classroom situation.

Rationale for the Study

The social benefits, the interaction between nationalities, the development of responsibility and the development of new skills have all been noted at the Boyne River School, but aside from one study by Doug Jones in 1993 the effects have not been documented. To this point, there has not been a study of adults who attended the Boyne River School when they were students. This study allows the

people to reflect back on the effect the Boyne River School had on their views of the environment. Now it is time to see if the researcher's feelings and observations about the effects can be backed up by a study of former students and whether or not environmental attitudes and skills gained at the school have been carried over into adult life.

Uniqueness of the Study

This study looks at former students who attended the school from 10 to 25 years ago, in grades 4 through 13 from the Toronto Board of Education system. As pointed out by Fortner and Mayer it is "even more unusual for longitudinal studies to be conducted to determine whether desired changes in a public occur over time." (Fortner and Mayer 1991: 30) The studies conducted by Jones and Townsend surveyed students who were still in the school system and therefore easily accessible. In the previous studies of other centres cited in this paper, the students usually have attended the centre in the last five years at most and may have the possibility to attend again (Jones 1993; Townsend 1996).

In this study, the respondents came from 128 schools in the Toronto Board of Education and from grades 4 through 13. Some of the respondents had children of their own who have attended the school in the last few years. The opinions of the respondents in this study will not be biased by the fact that their answers might lead to more time out of the classroom or the possibility of another visit to the Centre in school time. Their answers however will be clouded by

time and the impact of other experiences such as TV programs, visits to other centres, conservation centres and park interpretive centres. The questionnaire states clearly that the answers are to be given “From your recollections of your visit to the Boyne River Natural Science School answer the following questions.” This statement is direct and not ambiguous, therefore the responses should reflect the effect of the Boyne River School.

Literature Themes

The literature chapter, Chapter 2, looks at outdoor education, experiential education and environmental education and how they relate to the Boyne River School. We need to know the differences and the similarities in these types of education to understand what the Boyne River School is attempting to accomplish. The following is a short breakdown of these three types of education, all of which are done at the Boyne.

Outdoor Education

Outdoor Education is just what it says, education in the out-of-doors, doing that part of the curriculum that is best done in the out-of-doors. As a result, it can include, recreational activities and leisure pursuits. It can also involve environmental activities and any of the traditional subjects such as English, Music, Art, Math, History, Geography and Physics. In a letter written in 1990 that was sent to teachers preparing to bring their students to the Boyne River

School, Jerry Hodge, one of the school's principals stated, "Our first aim is to have students become involved in and with the natural environment and learn those parts of the science, social studies, geography, physical education and other curricula, which are best learned through first hand encounter." A similar feeling was expressed by Ryzhenkov (1990) when he talked about physics and chemistry as subjects that should be tied in with environmental education.

Outdoor education in Ontario began in the late forties with teachers and other groups who enjoyed the outdoors. It was seen as a way of achieving ends not possible in the classroom environment (Birchard 1996).

The first residential outdoor education school in Ontario, The Toronto Island Natural Science School, opened in 1960. Soon after this the Metro Toronto Region Conservation Authority started opening its centres. In 1965 the Schools Administration Act was amended to permit school boards over 10,000 students to buy their own property outside their jurisdictions (Birchard 1996). The Ottawa Board was one of the first to take advantage of this in 1966 with the founding of MacSkimming, followed shortly by the Toronto Board in 1967 when it purchased the property that would later become the Boyne River School. Since this time other boards have purchased or leased properties and facilities to set up outdoor programs. In 1968 Donald Hammerman called "outdoor education an 'emerging educational philosophy' across North America." (Raffan 1996: 7) In 1972 the Council of Outdoor Educators of Ontario was

founded. This group is made up of teachers, university professors, university students and other people interested in outdoor education.

Environmental Education

In the late sixties and early seventies there was an increased awareness and concern for the environment (Tomsen and Disinger 1998). This awareness in turn led to the development of environmental education.

What is environmental education? In the Boyne River School brochure, *Information to Parents*, it is defined as, " The process of developing an informed group of students and teachers who are sufficiently aware of environmental issues so that they can make informed decisions balancing the quality of life with the quality of the environment." This statement is quite similar to that found in the Belgrade Charter, UNESCO (1976) as quoted in Bennett (1989) or as stated by Simmons (1991), Miles (1991), Ryan (1991), Bowyer (1990), Horwood (1990), Andrews (1992), Klein and Merritt (1994), and Wals (1994).

As a basis for developing this informed group of people, environmental education stresses the understanding of basic ecological concepts and natural systems (Robinson 1994).

As pointed out by Lane, Wilke, Champeau and Sivek "Actual participation in resolving environmental issues also contributes to developing environmentally responsible behaviour. Effective environmental education should provide these opportunities for students." (Lane, Wilke, Champeau and Sivek 1995: 37) This aspect

of environmental education was also brought out by Robinson when she indicated the need for “direct sensory and manipulative experiences to bring about skills development and meaningful learning.” (Robinson 1994: 6) Simmons (1996a) explains that environmental education gives students the opportunity to study whole problems in real world situations. As Kingsmill points out “in out-of-doors settings, outdoor education is an active approach to understanding problems in context.” (Kingsmill 1997: 29) However as Wals points out “nature experiences and people’s perceptions of nature are an essential part of environmental education, but only when connections are made with everyday life and with the environmental challenges people face, as individuals and as society as a whole.” (Wals 1994: 178) The Boyne River School in its programs attempts to involve students in activities that will give them an opportunity to explore and work on solving environmental problems and tries to make the connections with everyday life.

The effect that hands-on experience in environmental education has on the outcomes of the students’ experience, as well as the length of program that seems to be best suited to this type of experience will be explored in the literature review.

In the literature chapter of this thesis, I will also look at some existing studies that have been done on this type of educational experience, including one that was done on the Boyne River School.

Experiential Education/Adventure Education

Experiential and adventure education are very similar and as a result are treated together in this section.

Karl Rohnke (1989) gives five objectives of adventure education. These are:

1. To increase the participant's sense of personal confidence,
2. To increase mutual support within a group,
3. To develop an increased level of agility and physical co-ordination,
4. To develop an increased joy in one's physical self and in being with others, and,
5. To develop an increased familiarity with the natural world.

These goals of adventure education are met by using physical activities such as challenge ropes courses, initiative problems, trust activities and co-operative games. These activities are designed to be both stressful and joyous, and to give the individuals physical success (Rohnke 1989). Using this method can also be a means of breaking down gender barriers as was found by Kunz and Putnam (1996) when working with a group of students in Russia.

Adventure educators and experiential educators both claim to use the experiential learning process. Many adventure educators belong to the Association for Experiential Education (AEE) and thus some people who attend the AEE conferences get the impression that adventure education and experiential education are the same thing (Wurdinger 1993).

What are the differences and similarities in these two types of education? Adventure educators often use the traditional approach to education. Before they can take students on a ropes course, canoeing or skiing, they must teach the skills required to safely participate in these activities. These skills are taught in the traditional manner rather than experientially. However the students then apply these new skills immediately (Wurdinger 1993).

Experiential education is more of a learning process than a learning of content; there is a problem to be solved for which a plan must be developed and then applied. This process does not necessarily require physical activities. Adventure education has specific content, namely adventure activities that utilize experience and physical involvement in its learning process.

As a result of these statements, it is easy to see why some authors tend to interchange these terms. Outdoor education can be environmental education or experiential education or adventure education as long as it is done in the out-of-doors. Outdoor education emphasizes not the subject, but where learning takes place and as such often has an environmental and experiential component.

Contents of the Thesis

Chapter 3 looks at the methods used in this study. Issues such as size of sample, and respondents type are discussed. This chapter will also look at the development of the survey.

Chapter 4 looks at the Boyne River School, its history and location. Who does it serve and why? It will look at its program goals as well as its goals for the students. I will also give some of the background obtained in interviews with the original principal, some of the original staff and one of the first student teachers who became the school's first vice-principal.

Chapter 5 gives the survey results in chart form and discusses these results, while chapter 6 summarizes the results as well as draws conclusions.

Chapter 2

Literature Review

The literature for this study, of necessity, covers a number of topics. One of these, as we saw in Chapter 1, is the question of what is outdoor education and how similar experiential, environmental and adventure education are to name a few. As pointed out by Robert Chisnall (1990) these terms, along with several others, are often used almost interchangeably. James Raffan points out “the discussion of outdoor education jargon and particularly the attempts to distinguish between outdoor education and environmental education are interesting enough, but they don’t go anywhere.” (James Raffan 1996: 5) This chapter will also look at the value of the *hands-on* approach used in outdoor education as well as the ideal program length and the types of program offered.

Outdoor Education

Donaldson and Goering (1972) argue that it is unfortunate that there has to be such a thing as outdoor education. Although the idea that outdoor education as a separate entity is not needed was stated when outdoor education was still in its infancy, it is still valid today. That is, if teachers taught their lessons where they were best taught, many lessons would be taught in the outdoors! Raffan

(1996) echoed this sentiment when he talked about classroom teachers doing “what I would call powerful outdoor education from a classroom base. To them, there was never a distinction between indoor and outdoor education. To these people, going outdoors was just one element in GOOD TEACHING that went hand in hand with engagement, community involvement, problem solving, group building, getting results, going places, being able, celebrating achievement, and so on and so on.”(Raffan 1996: 10) Donaldson and Goering (1972) also point out in their curriculum and teaching section, that outdoor education is not a subject but a place to learn and apply what has been learned in the classroom to practical outdoor situations. Wilson points out that outdoor education is “just a means to an end, or in other words, it is truly a methodology”. (Wilson 1997: 7) She also points out that it is an integrated form of learning taking in many subjects. This concept was also expressed by Eagles when he pointed out that it was “more holistic, more integrated and more designing with nature” (Eagles 1997: 12) and Mozzi referred to it as “a multidisciplinary approach”. Mozzi (1996: 15) Raffan when discussing what outdoor education was, talked about the orienteering and birding or the “educational enterprises” as he called them. He then went on to say that “we are also about developing respect for the environment; we are about teaching people to live with each other, to be conscious of differences; we are about art; we are about science; we are about language arts and music; we are about personal growth and wholeness; we are about learning to live with available means; we are about sustainability; we are about experiential teaching; we are

about spirituality and matters of the heart; we are about helping our students construct personal meaning in an ever changing world.” (Raffin 1996: 11) From this statement it is easy to see that outdoor education is made up of many different facets.

Donaldson and Goering and the rest of the staff at the Taft Campus of Northern Illinois University had a great deal of influence on the Boyne River staff. Several trips were made to the Taft Campus, in the early days of the Boyne River School where Donaldson, Goering, Hammerman and Weiner along with some of the other professors at this campus put on workshops for the Boyne staff, followed by philosophical discussions over dinner at their homes. During these visits teaching techniques were demonstrated, new topics were introduced to the Boyne staff and discussions about outdoor education, environmental education and experiential education took place.

The Boyne River School program for each individual week and school is tied into what is happening in the visiting students’ classroom. This helps to give the opportunity to make the Boyne River School an extension of the classroom. This link to the curriculum is necessary if outdoor education is to remain credible (Wilson 1997). As Raffan stated the programs in outdoor education that are surviving in these times are the programs “that are by design dovetailed with curriculum.” (Raffin 1996: 9) The Boyne River School program gives urban students the opportunity to explore and interact with the natural world, which can be a problem for them in the city (Robinson 1994).

Why then is there not more teaching in the out-of-doors? Cost is one big factor. Classrooms were designed as an economical way to use one teacher to teach a larger number of students. The outdoor experience requires smaller groups of students both for safety and because it is not practical to teach a large group spread out on a trail in the woods. But as Miles points out “efficiency sometimes becomes an end rather than a means and leads to missed opportunities.” (Miles 1991: 6)

Environmental Education

Environmental education emerged in the late sixties and early seventies as a result of the concern of society and the individual about the environment (Tomsen and Disinger 1998; Eagles 1997; Martin 1997; Birchard 1996). “Environmental education should consider the environment in its totality, natural and human, ecological, political, economic, technological, social, cultural and aesthetic (CDVEC 1997: i).” Environmental education is a lifelong activity. As pointed out by Bell, Russell and Plotkin environmental education “represents a possibility of working toward an understanding of nature that is grounded in caring, respect, and a sense of wonder - an understanding that seeks less disruptive and destructive ways of living in the world.” (Bell, Russell and Plotkin 1998: 4) Bogner put it slightly differently saying environmental education “other than to generate knowledge, is to develop students’ awareness and concern about the total ecosystem and its associated problems and to shape students’ behavior concerning the

environment and conservation.” (Bogner 1998: 18) In the classroom it can focus on problems that give the students the opportunity to participate in finding solutions, thus developing attitudes and awareness as well as knowledge and skill (CDVEC 1997). However because environmental education is about the environment, what better place to study it than the out-of-doors. Thus outdoor education and environmental education became closely related and often interchanged. Environmental education, like outdoor education, is not a subject as such but draws from many disciplines including political science, ecology, biology, anthropology, and geography (Simmons 1996b; Wilson 1997). Society as a whole is becoming more environmentally aware, but is often not converting this awareness into action. The convenient route often wins out over the good intentions of the individual (Cox 1996). As pointed out by Slocombe and Van Bers when talking about sustainable development “There is much room for, and danger of, its being supported while business and industry, national and international inequities, and environmental degradation continue unabated.” (Van Bers 1991: 11) As Tomsen and Disinger point out “If cognitive gains (i.e., a better understanding of the nature of environmental problems) do not of themselves motivate people to modify their behavior, what will?” (Tomsen and Disinger 1998: 11) Outdoor education can put students in an outdoor situation and gives them the opportunity to solve an environmental problem. This gives them the sense of satisfaction that comes with accomplishment and hopefully the ability to solve environmental problems will carry over to their everyday life when they go home from the centre.

One of the problems faced by environmental education as pointed out by Wals is the fact “that those who are most directly exposed to environmental threats -- whether it is because of race, class or both -- are also the ones who receive very little environmental education or education for change. If this is true, then environmental education constitutes an elitist form of education that serves those who have the luxury (money, time, community support, and resources) to spend time to resolve environmental issues.” (Wals 1992: 46)

Experiential Education

Experiential education gives the student the opportunity to experience what they are to learn. As pointed out by Miles “Experiential education is the foundation of all outdoor education.” Miles (1991: 5) The students actively participate in an activity that helps them learn about the topic they are studying. Adventure education makes use of challenges to give students the satisfaction of helping to solve a problem, in a group problem-solving exercise, or in overcoming a fear by tackling an element on a ropes course. This group problem solving can have other advantages later in life, as Miles points out “people are raised in American society to compete, yet are often better off co-operating.” (Miles 1991: 9) It is hoped these successes and the ability to co-operate that has taken place at the Boyne River School will carry over into their everyday life.

Outward Bound which came from the British Isles in the sixties, followed by Project Adventure from the U.S.A. in the early seventies, are two of the biggest proponents of adventure education, although many other groups also use this type of education. At the Boyne River School this type of education has been used from the beginning, with the first ropes course built in 1975, and several of the staff taking workshops from Project Adventure.

Student Involvement in Outdoor Education:

The literature suggests that education and students' involvement (first hand experience) adds greatly to the learning of students (Bowyer 1990; Horwood 1990; Keen 1991; Lisowski and Disinger 1991; Slocombe and Van Bers 1991). As pointed out by Miles quoting Coleman "That which is learned experientially, "appears to be less easily forgotten than that acquired through information assimilation." (Miles 1991: 7) It will be interesting to see if this is the case with the people in this survey. Bogner stated "Direct experience of sufficient duration can, then, elicit a positive shift in attitudes and behavior." (Bogner 1998: 27) As pointed out by Julian Smith "In the woods, fields, and streams children can see, feel, hear; they can even smell and taste. Here reality, with all its vividness, becomes both motivation and method for learning" (Donaldson and Goering 1972: 27). The outdoor setting of the outdoor education centres makes it easy to provide the hands-on experience in the various subjects. As pointed out by Wals "without nature experiences people will not come to appreciate and value nature.

Since people are less willing to preserve or conserve what they do not appreciate or value, any environmental education program that does not provide students with nature experiences is likely to fail.” (Wals 1994: 178) This hands-on experience can be provided in other venues. This involvement has been found true of other facilities such as science centres and museums (Screven, 1986). As was stated in chapter one, hands on learning is a strong component of the Boyne River Program.

Program Length of Outdoor Education Programs:

One question to be investigated is how long a program in the out-of-doors is optimal? John Muir is quoted in Miles (1991: 5), "one day's exposure to mountains is better than a cart load of books." There is some validity in this statement when we look at the results Townsend (1996) found in her study that looked at day centres. This same sentiment was expressed in the early seventies by Earl C. Kelly when he said, “it is the quality of the experience, not necessarily the duration, which really makes the difference” (Donaldson and Goering 1972: 5). Gillett, Thomas, Skok and McLaughlin (1991) found that programs of two and one-half days had a significant impact and that programs of five days were the optimum. Bogner found that in comparing a 1 day program with a 5 day program “only the residential 5-day program had any effect on behavioral levels, although both programs addressed the same goals.” (Bogner 1998: 26) Shepard and Speelman stated “Program length does appear to have an effect on developing positive environmental attitudes.

Residential camp programs of five days in length seem to have had a more positive effect on environmental attitude development. This fact should encourage educators to emphasize hands-on activities at outdoor biology sites and to promote week-long programs that can shift attitudes and behavior.” (Shepard and Speelman 1986: 22)

Most programs at the Boyne River School are of five days duration, as this length of time is the most effective, although programs of two and a half days, four days and ten days are also run during the year to accommodate specific programs.

Previous Studies of Similar Programs in Outdoor Education:

Most studies in outdoor education have taken place less than a year after the environmental education experience (Westphal and Halverson 1986; Ryan 1991; Lisowski and Disinger 1991 and Keen 1991).

In the Keen study, 578 students in grades five and six took part in a five-day Sunship Earth residential program designed to improve students' ecological knowledge and environmental attitudes. These students from 27 classes were divided into small groups for the program. All classes were taught by the same teachers, thus there was little variation in the presentation. A pre-test was given to all groups. Six months after the program a post-test was given. As a result of the program there was a significant gain in ecological knowledge, but not in attitude. The 'hands-on' nature of the program was found to be beneficial in aiding the learner to comprehend ecological knowledge. A program similar to the Sunship Earth

program is run on occasion at the Boyne River School as it gives the students a good ecological background in a hands-on manner that the grade five and six groups find fun and enjoyable.

Lisowski and Disinger (1991) studied, 79 high school students who took part in three different seven-day field programs. They were given a pre-test, a second test at the conclusion of the program and then a final test four weeks after the completion of the program. The conclusions of this study showed that field programs helped the students understand ecological concepts that they retained at least for a period of four weeks.

Ryan (1991) studied the effects of a one-day program of 'hands-on' activities in the out-of-doors on fifth grade students one year after the visit. In this program 1,851 students took part. A sample size of 504 was used for the study, of which 84% had participated in the program. The results of questionnaires given to those who had taken part in the program and those who had not, showed that those who had taken part in the program had a greater environmental awareness. Students who had visited the site on other occasions showed an even greater appreciation. The familiarity with a site was also pointed out as an advantage by Slocombe and Van Bers (1991).

Gillett, Thomas, Skok and McLaughlin, (1991) found similar results to the Ryan study in a six-day program with 61 grade twelve students. In this study pre- and post-tests were given and a control group was also used. The results showed significant gains in self-concept and in environmental knowledge, but not in attitude.

As can be seen from these studies there is some value to be had from outdoor programs of all time lengths. In these programs students from grades five through twelve were found to have gained in their knowledge and comprehension of ecological concepts as well as a greater awareness and appreciation of their environment. However the 5 day program is the optimal length. Students are away from home long enough to be immersed in the program, it gives the teachers long enough to develop the group and to study topics in depth. There is also a lot of social learning that takes place as a result of the residential nature of the programs. The 5 day programs do not face the problems associated with running into the weekend that longer programs do.

Previous Ontario Outdoor Education Studies

In his study of the Boyne River School, Jones (1993) attempted to look at students 5 years after their visit, but was only able to find 17 students to fit this criteria. As a result he had to settle mainly for students that had attended the school the same year or in the last year: 245 of 289 students. These students were in grade 7 to grade 13 (OAC's), 52% were male and 48% female. The study consisted of 66 questions.

The results of Jones's (1993) study showed that the response to the question, "The thing I remember most about Boyne River School" was: the hiking and ropes course were highly remembered. As most activities at the school include some hiking, this is not surprising. The ropes course, an experiential education based part of

the program, is a very challenging activity both mentally and physically and is very much enjoyed by most students. However many other activities, some academic and environmental education based, were also remembered by various students showing that the program had something to offer to satisfy the different interests of the diverse students who attended the school.

The social aspect of a visit to the school also came out in this study. Many students commented positively on the interaction they had with the various people at the school as a result of living with them 24 hours a day.

Jones (1993) found that over 50% of the students had attended the school more than once and more than 6% had attended more than 5 times. Indeed some students in this study had attended as many as 12 or 13 times. In his study Jones (1993) did not indicate whether or not the number of visits affected the answers of the students.

In response to the question, "I have good memories of the Boyne River School." Jones found that 85% of the students agreed. In response to his questions about learning in the out-of-doors, 70% felt they learned more outside the classroom than inside; and in response to learning by direct experience 78.5% agreed with this concept. Over 80% stated that co-operation is important.

In his study one of the questions Jones raised as a result of his study was whether or not "enough information was given on what an individual could specifically do to positively affect the environment." This is something that will have to be addressed by the Boyne River School program in the future. The conclusion of this study was that the student satisfaction rate was very high. The

students also felt they had learned a great deal and gained in self-confidence. Many of these students also felt they had improved as a person. It will be interesting to compare these results with those of students who have attended the school at least ten years previous. Some of these points are compared in chapter 6.

The most recent Ontario Outdoor Education Centre study available to the author at this time was done on the Waterloo County Outdoor Centres in 1996 by Alisa Townsend under the guidance of Professor Paul Eagles who was also the adviser for the Jones (1993) study. In Townsend's study a group of 571 students were surveyed to find their satisfaction with, and recollections of the programs. These students came from grade 8 classes in five elementary schools (408 students) and grade 12 classes (163 students) in two high schools. This student population contained 281 females, 283 males and 7 no response to a question on gender. The majority of these students had attended a day use centre in grade 5 or 6 for the first time. For a student then in grade 12, which was 163 of the respondents, that would mean it had been a maximum of 7 years since they had been to a centre. However many of these students had been back to the centre a number of times since this first visit, thus reducing the time since they had been to a centre. The rest of the students in this survey were in grade 8, so the longest time since they would have been to a centre would have been 2 years.

This study found that as many as 74% of these students experienced fun and enjoyment in the outdoors which hopefully added to their learning experience. It also found that 92% of these students found a visit to an Outdoor Education Centre during school

time a worthwhile experience. Was this because it was in school time and gave the students a break from the regular school routine? It will be interesting to see if this view is also held by respondents after they have left the school system.

As a result of the study, it was found that the visits to the centres were not only educational but enjoyable. These visits also led to the development of skills that could become lifetime skills. This would indicate that money spent on outdoor education programs by boards of education is money well spent.

Another comment that came out of this study was the fact that the hands-on approach used by the centres left long lasting impressions on the students. It is this learning by doing that makes this type of program valuable for many students. This study concluded that 91% of the students studied had positive memories of their visits to the centres. What about the other 9%? Townsend did not tell us why they did not have positive memories of their visit although the author could speculate that weather could be a factor. This was found to be the case in a study by Bell, Russell and Plotkin (1998). They conducted workshops in the outdoors and as they stated "Reckoning with the weather, for example, was a challenge for us at all of the workshops." Many of the students did not dress appropriately for the weather and as a result "going outside was identified as the least liked activity on several student evaluations." Another problem could be the program chosen could be one the student was not interested in or could see no connection to the classroom work. Bell, Russell and Plotkin (1998) pointed out

that this was a problem in their workshops where they “worked in isolation from the students’ regular programs.”

Jack M. Bourdon (1995) looked at field excursions in Waterloo County to see if they constituted good environmental education. For the study he used the following criteria to determine the value of these excursions. He determined these criteria by going through literature on environmental education and looked for commonalities, these he then used to form his criteria.

Environmental Education:

1. should emphasize affective, behavioral and cognitive goals
2. should be theoretical, systematic and comprehensive
3. should be in all grades
4. should be multidisciplinary (infused) throughout curriculum
5. should include (at least) the biophysical, constructed, social, economic, and global aspects at different scales
6. should provide skills to save the environment

With these criteria he concluded that the excursions by the Elementary grades satisfied more than 60% of the criteria only 9% of the time and at the Secondary level 41% of the time. These programs were of one-day duration and were conducted by classroom teachers.

Unfortunately, Bourdon did not look at what actually took place in these programs; only the write-up on the applications to get permission for the trips. These by nature tend to be rather brief, with not much detail. Many of the criteria may well have been met in the actual trip but were not written in the brief request. Or, the teachers not being outdoor specialists may not have met the

criteria. This study would seem to indicate the need for outdoor specialists to conduct relative programs and the value of 5 day residential programs.

The programs at the Boyne River School are conducted by outdoor education specialists, who at the end of the study period, 1986, had over thirteen years experience in the field. Of the criteria stated above, although it is questionable of what value they are, the Boyne River School meets most. It does not meet number three. Because the Boyne River School is a residential school it was decided to take students only from grade five and up. This was to minimize problems with home sickness and bed wetting that would be encountered more often with children from the younger grades.

The Jones (1993) and Townsend (1996) studies, as well as this one, differ from the Bourdon (1995) study in the fact that they look at the outcome of the trips and what effect the experience has had on the student rather than the write-ups for the programs.

Conclusions

- 1) The Boyne River School program uses an amalgam of outdoor education, environmental education and experiential education concepts.
- 2) The teaching of concepts in the out-of-doors, using the full sensory stimulation found there, is critical to student learning.
- 3) Researchers have found environmental fact and attitude impacts on students with programs from one day length to 5 day length.

- 4) The studies suggest that longer duration programs are more effective.
- 5) Most studies look at educational impacts on students less than 1 year after the outdoor education program.
- 6) Very long after the fact evaluations, greater than 10 years, are very rare.
- 7) Existing studies of Ontario school-based programs show high levels of positive educational impact.

Chapter 3

Methods

Evaluation

There are many evaluation methods that could be used for this study. Korn cites a number of reasons in his explanation of the sample survey that make this particular method ideal for this study. First he explains evaluation as opposed to research. Evaluation, as he says, "is a systematic collection of information about the characteristics, activities and outcomes of a program that is useful in making decisions about the program's continuation and improvement". (Korn 1988: 221) Research, on the other hand, tests hypotheses. The hypothesis for this study is that *Attending the Boyne River School has a lasting effect on people's environmental behavior and attitudes*. This paper is a research document to find out the lasting effects on people and an evaluation of the program to help improve the Boyne River School program. As "evaluation and research share the same methodologies" (Korn 1988: 221) it makes this document useful for both research and evaluation.

The Survey

The sample survey is a systematic, standardized method of collecting information from a large sample. Korn says it can be used to discover, "attitudes, beliefs, behaviour, and attributes of people". (Korn 1988: 233) The questions in a sample survey are based on the goals that are specific to the study. As pointed out by Tomsen and Disinger "An effective method for assessing a range of outcomes of environment-related courses would provide evidence of the direction and degree of change in student beliefs, attitudes, and perspectives as well as evidence of knowledge gained. Ideally, the method would measure not only general gains in environmental knowledge or concern but also more subtle changes in student perspectives." (Tomsen and Disinger 1998: 12)

Surveys can contain two types of questions: open-ended and closed. Open-ended questions are most valuable in designing the standardized questionnaire. In designing this survey the author interviewed a small group of former students using many open-ended questions. These interviews helped the author decide which questions to include in the survey. The staff of the Boyne River School were also consulted as to which questions they thought would be useful in improving the school program. The final 29 questions that were used in this survey came from a number of different sources. The Jones (1993) and Townsend (1996) surveys were consulted so that they could be used as a comparison. As a result, there were a large number of questions that either were the same or very similar to questions in these surveys.

Page 1 of the Survey

As in both the previous mentioned surveys the question of gender was asked (see Appendix A) so that the effect on these two groups could be looked at in more detail. In this study this was question 4 on page 1.

Question 1 on page 1 in this study asked the respondent in what year they attended. As this study was looking at students who attended up to 25 years before the study took place the author felt it would be valuable to know how many attended in each year to see if each year was at least represented.

As many different grades attended the school, question 2 on page 1 showed if all grades were represented and the breakdown between elementary and high school. It was also a question that was in the other two studies.

The other two studies also questioned the number of times the students attended. This had a bearing as Ryan (1991) found, that students who had visited a site more than once gained more than those who had the opportunity to visit one time. This was questioned in this study in question 2 on page 1.

Unlike the other 2 studies where specific schools were targeted for the study this study did not target any specific schools but rather all schools that had attended the Boyne River School in the time frame of the study, hence question 3 on page 1 was asked to ascertain the schools the respondent had attended. This also allowed the author to see what percentage of schools that had attended in the study time frame had respondents. These 4

questions were used to get background information on the respondents and made up page 1 of the survey.

The Rest of the Survey

Question 1 in the second part of this study was modeled on question 22 in the Townsend study. This question was asked to see if there was a big enough impact on the students so they would want to talk about their experience. Unfortunately there is no way of telling if it was a positive or negative impact that caused them to talk to their friends a lot about their experience.

Question 2 in this study was taken from the Townsend study where it was question 18. This question was asked to see if there was a change in the respondents' view of wildlife as a result of their visit or visits. This question would also show if there was any gain in environmental attitude since the literature indicates this is often not the case.

Question 3 in this survey used question 4, 37 and 47 in the Jones' survey and question 30 in the Townsend survey as a basis. The results of this question could indicate an attitudinal change towards the out-of-doors in the respondents.

Question 4 was based on question 39 in the Jones survey and questions 34, 35 and 36 in the Townsend study. The results of this question could also show an attitudinal change towards living things.

Question 5 was a result of questions 17 and 38 in Jones' study and questions 31 and 32 in the Townsend study to see if there

was an increase in self confidence. This is an area that the literature indicates experiential education does well.

Question 6 in this survey was prompted by question 29 in the Townsend survey about participating in new outdoor activities.

Question 7 in this survey was chosen as a check on the respondent's memory about playing sports.

Question 8 came from the author and the Boyne River School staff. Many of the activities at the school involve hikes that usually have a nature component to them. This is also an excellent lifetime activity. Jones also found in his study that many students enjoyed hiking. Did these hikes have a lasting effect?

Question 9 was a result of question 35 in the Jones study and question 14 in the Townsend study regarding a lifestyle change another attitudinal change.

Question 10 making a positive difference to the environment was taken from the Townsend study where it was question 15.

Question 11 considering the environmental impact of actions came from the author as a result of his questions with the former students, this is also another indication of an attitudinal change.

Question 12 learning a new skill used question 55 from the Jones study and question 25 from the Townsend study as a basis.

Question 13 positive memories was a result of question 1 in the Jones study.

Question 14 was brought about by questions 36 and 50 in the Jones study and a desire of the author to see if students remembered those with whom they had worked.

Co-operation is a large part of many programs at the Boyne River School therefore the need for question 15. It was also part of the Jones study although not worded exactly the same. His question 11 was similar and his questions 28 and 48 were looking at the same concept. The literature also recognizes co-operation as a worthwhile goal for outdoor education.

Question 16 achieving 'personal best' was a direct result of 1 of the goals of the Boyne River School and was a question some of the Boyne staff felt should be asked directly.

Question 17 was also a question the Boyne Staff wanted asked. This question also ties in with the social aspects of a residential program. The dorms at the Boyne are 4 large rooms accommodating up to 36 students each. Although this arrangement is convenient for supervising elementary students it does not afford much privacy. Some secondary students do not like this arrangement nor do their teachers. This question was also approached in the Jones study in question 12.

The hands-on aspect of outdoor education is addressed in question 18, this concept was also questioned in the Jones study in question 13. This concept is one that is found in much of the literature on outdoor, environmental and experiential education.

Question 19 was asked because the author feels that fun should be a large part of the learning process if it is to be successful. This question was also asked in the Townsend study in question 23 and 28 although worded differently and question 33, 47 and 53 in the Jones study. Szagun and Mesenholl (1993) found that

enjoyment of nature (fun my interpretation) can be a motivator for preserving nature.

One of the differences many students notice in working at the Boyne River School is the size of the groups in which they work. Although some of the students might have been in classes with low numbers the group size of 12 to 14 students used at the Boyne would have been much smaller than most were use to working in. Question 20 addresses this to see if the students appreciated the smaller numbers.

Question 21 was another question that was asked to check on the respondent's memory. The author as well as the staff of the Boyne River School were of the opinion that students did not have much opportunity to do things by themselves. This question did not work out as the author had intended.

As the Boyne River School serves the downtown core of the city of Toronto question 22 was asked to ascertain if city students had much opportunity to visit the countryside outside of trips to outdoor centres. This also ties in with Wals (1994) contention that environmental education is becoming elitist. It also allowed for a comparison of the impact on the two different groups of students, those who had the opportunity to visit the countryside a lot and those who did not have the opportunity.

Question 23 visiting an outdoor centre is worthwhile was taken directly from the Townsend study. There was a very high positive response rate to this question in her study and the author felt it was important to find out if this feeling carried over a long period of time.

As outdoor education is multidisciplinary and the Boyne River School runs programs in art, music and includes programs for students to develop their English, the author felt it would be worthwhile to see if the respondents saw this connection as a result of their visit or visits. This connection is mentioned in the literature review of this paper.

Question 25 the thing I remember best was included to see what aspects of the program the students remembered the most. The author anticipated the respondents giving a single example, this did not turn out to be the case as many respondents listed a number of things.

Tracing the Respondents

Many students do not spend their whole school life in one school board of education or in one city. The students who attended the Boyne River School from 1973 to 1986 are now spread all over the world and all have left the school system. The author did not have a grant to search down respondents, however he did have the support of the Toronto Board of Education and its research department in this study as well as many of the teachers who had brought students to the Boyne River School over the years.

Because of the long time frame involved in this study, there was some difficulty in tracing former students. This is consistent with other similar studies. Brown (1996) found that two-thirds of a Grade one cohort left the Toronto Board by Grade eight. The Social Planning & Research Council of Hamilton & District (1994) conducted

a study of the "Big Brothers" Organization looking at an original population of 4,003 individuals in 1993, of whom they were able to trace down 778 using a grant of \$20,000. The Niagara South Board of Education (1992) started with the names of 1,700 dropouts for a study and ended up with a survey sample of 171 of these people using records in the schools.

Plan for Current Study

To help develop a trial questionnaire a personal interview was conducted with five former students. After the questionnaire was developed it was tested on a small study group. As a result of this trial, the questionnaire was modified slightly and some questions were reworded to make them clearer. The final questionnaire contained 29 questions. It was introduced by a cover letter (Appendix A). While the identity of some of the respondents to the final questionnaire is known to the author because of the methods used to track them down, their identity will be kept confidential. All questionnaires were returned to the Boyne River School without a name on them. However, a few respondents put their names on the surveys even though this was not requested. These surveys will be stored at the school. There are no identifiable physical, psychological, or professional risks to the respondents as a result of participation and most have the benefit of providing feedback on a formative and enjoyable experience. The final report gives only aggregated responses to maintain the confidentiality of the respondents.

The Sample Selection

The sample was obtained through a number of ways. The various methods used are listed below.

1) Of the 128 schools that attended the Boyne River School in the survey time, 98 were visited by the researcher between February and May of 1997. At each school the help of the existing staffs of these schools was requested in contacting former students who had attended the Boyne River School to fill out a questionnaire. As a result, notices were put in many of the home and school publications of these schools for distribution to area homes where there was a good chance that former students may still be living. The other 29 schools were not visited either because staff from some of these schools were contacted when they visited the school, or the remaining few the author ran out of time to visit.

2) The author followed up on old school lists of students who attended that some of the home room teachers had kept.

3) Former students were traced by asking present day students if their parents had attended the school. Each week in the 1997-1998 school year, students were surveyed to see if they had a parent, relative or sibling who attended the school in the survey time period. Those that indicated they did were sent home with a copy of the survey.

4) Notices were placed in the Toronto Board of Education news bulletin requesting help in locating former students who had attended the Boyne River School.

- 5) Notices were placed in the Council of Outdoor Educators of Ontario publications also requesting help in finding former students.
- 6) Some former students were contacted as a result of the snowball technique, i.e. respondents mentioned other people who they knew had attended the school.
- 7) Some respondents were traced by referral through homeroom teachers who have maintained contact with former students.
- 8) Notices were sent with student teachers who had practice teaching sessions at the school, to post in their university.
- 9) All visitors to the school that the author had a chance to talk to were asked if they had attended the school in the survey time period or knew of anyone who had attended.

The most valuable method, that got the greatest number of returned surveys turned out to be the personal contact with people who visited the Boyne River School. These people either attended in the study period or knew of people who had attended or both. This accounted for over 50% of the returns.

For this paper 1,580 surveys were printed, there are 60 on hand at this time. Each school that was visited by the author was given 10 copies of the survey and asked if they would try to find respondents to fill it out. A number of other schools were contacted when they visited the Boyne River School and given 10 surveys with the same instructions. This accounted for 1,150 surveys. Individuals who visited the school were approached as to whether or not they had attended the school in the study time period. Those that indicated they had were given a survey for themselves and 2 to 5 more for friends they might still be in contact with that had

attended with them. This accounted for another 300 surveys. Another 15 surveys were sent by mail to the addresses given by home room teachers. This leaves 55 of the printed surveys unaccounted for at this point. These surveys were handed out to people who wanted a copy even though they had not attended the school or were misplaced. Of the surveys handed out 125 were returned.

Because of the time frame involved in this study, a minimum of 10 years and a maximum of 25 years ago and the lack of funding it was difficult to get a truly random sample. So for this study, the researcher endeavoured to get a reasonably representative sample of the former students. This was done by seeking respondents who attended as many different schools and as many different grades within the Toronto Board as possible. This gives a reasonable cross section of the more academic schools as well as the less academic schools, the more well to do areas of the city, as well as the less well to do areas, and thus a fair cross section of the students who attended the school in the study period. The respondents that the researcher was able to find attended 73 of the schools that attended the Boyne River School in the survey period and represented all of the grades that attended, that is grades 4 through 13.

I must agree with Fortner and Mayer when they stated that "We recognize that, as a result of the low percentage of response, some researchers may legitimately question the accuracy of the information obtained and the comparisons made." They go on to say that "that some data, even if faulted, is better than none. The

information provided here does indicate strengths and weaknesses -
-----.” (Fortner and Mayer 1991: 34)

One other problem that was encountered in this study was the fact that no record exists of who did come to the Boyne River School in the study time frame. Each week there is a record of the pupils who attended in that week. These are kept on hand for several years then destroyed. As a result it was necessary to estimate the number of people who attended in the study period. The author estimated the number of students that attended by taking the average number of students times the average number of weeks that the school was open in each year of the study. This did not take into account those students that attended more than once. Using this method it was estimated that approximately 60,000 students attended in the study period.

The following map (Figure 1) shows the locations of the respondents' schools.

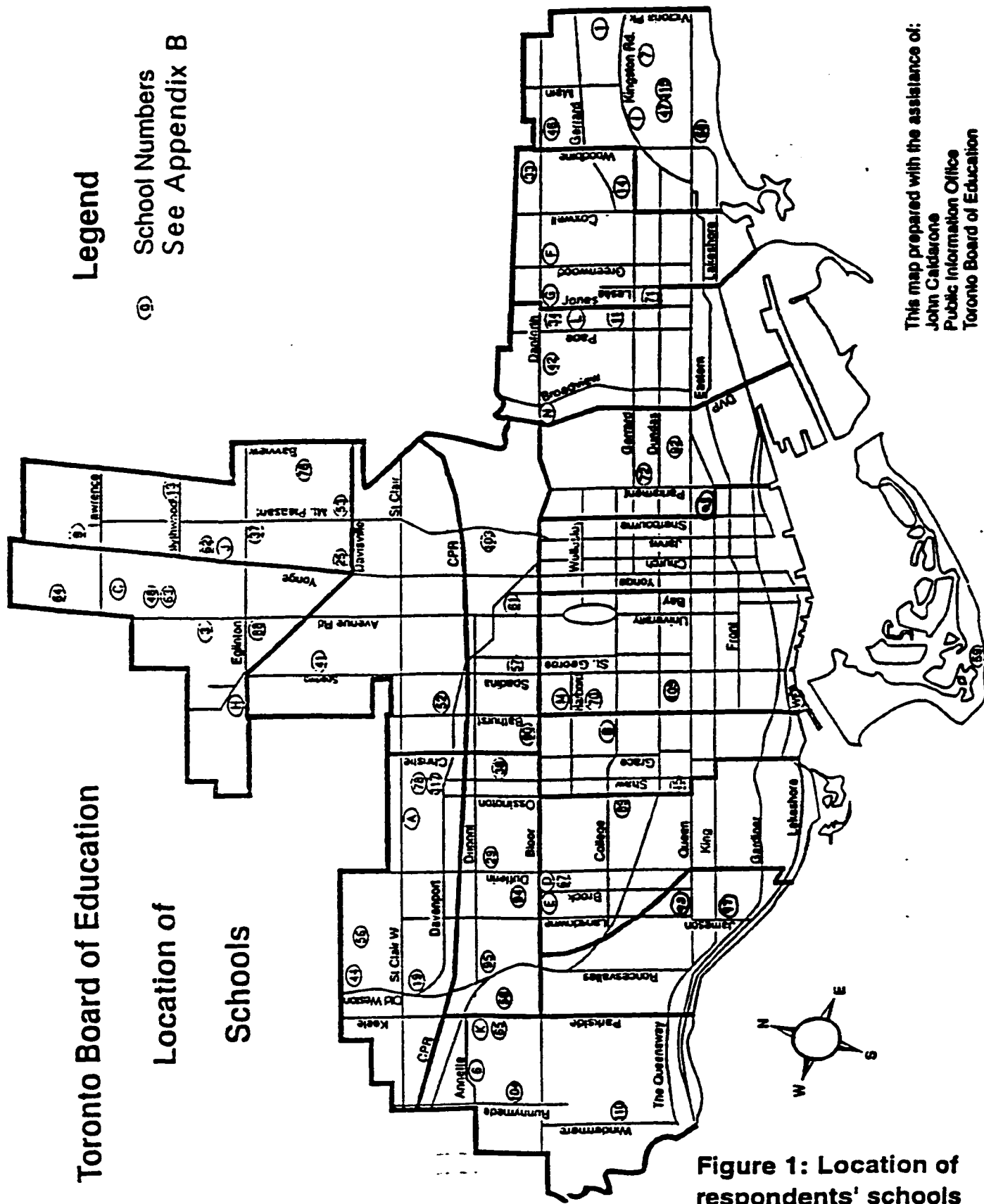


Figure 1: Location of respondents' schools

Size of Sample

The author endeavoured to get as large a sample as possible, however as the time frame was so long ago it was difficult to find former students. So far 125 respondents were found.

If it were possible to get a random sample for the population of 60,000 students that attended the Boyne River School between 1973 and 1986, a sample size of 382 would be required for a permissible error level of .05 (National Education Association 1965). Obviously this has not been achieved in this study. What are the problems that made it very difficult to achieve this number? As was stated earlier there are no lists of the students that attended in this time frame. The 60,000 figure is an estimate based on average numbers that attended in the time period. As there were no lists and no budget for this study, the researcher had to rely on his own resources. As the researcher was a staff member of the school throughout the time the study took place, he had knowledge of the teachers who had brought classes to the school. As many of these teachers as it was possible were contacted for help tracing former students. Being at the school still, he was able to search out more respondents from people that have come to the school over the last year either as a teacher bringing students or as a student who's parent had attended or as a university student on a co-op placement. This still has only lead to the 125 responses indicated earlier. This method of searching out respondents lead obviously to some response bias. About 20 or 25 of the respondents were teachers, who had been students, and now had brought their students to the

school for a visit and thus were available to the author to give a survey to and be sure they filled it out before they left. These people obviously had a positive bias toward the program if they were willing to bring their students to the school. The author has no way of knowing how many people received the survey and did not fill it out and return it for as Fortner and Mayer (1991) pointed out “the receiver of the study offers eventually cries ‘Enough’ and refuses to further participate”.. Therefore there could be bias built in as a result of this decision as to fill in the survey or not. The search for more respondents is continuing with the hope that the 382 survey mark will be achieved so this bias will be alleviated.

Subjectivity

Obviously, the responses to this questionnaire are subjective. However the top of page 2 of the questionnaire states “From your recollections of your visit to the Boyne River Natural Science School answer the following questions.” It is difficult to separate out the other educational influences that may have affected the respondents' answers. For the objectives of this study this is not a problem, for if the respondents feel that it was the Boyne River School that caused them to have the opinions shown on the questionnaire, then that association is a significant factor in their development and in the school's influence.

Data Analysis Procedures

Data was recorded in Excel spreadsheets. As a result of questions that arose concerning the data it was rechecked with the original surveys. This data in table form was transferred through the Chart Wizard function and transformed into chart form.

Statistical Analysis

Some of the data gathered in this survey was subjected to statistical analysis. This analysis was the chi-square test for association. This analysis is used when you wish to test for an association between two or more sets of measurements, each at the categorical level. Provided that each measure is independent of the others and provided that the expected frequencies, under the null hypothesis of no association, are larger than five. (Chalmers and Parker 1989) As the data in this study fit these criteria this test was done to see if there was any significant difference in some of the responses between male and female as well as between those that had visited the countryside a lot before their visit to the school and those who had not.

This analysis was done manually using a calculator.

Chapter 4

Boyne River School

The Boyne River School is a residential outdoor education centre, located near Shelburne, Ontario. From 1973 to 1997 it was owned and operated by the Toronto Board of Education. However on January 1, 1998 it became part of the new amalgamated Toronto District School Board. From 1973 to the present, the school took in approximately 140 students per week from grades 5 through 13. The 140 students who attended each week were divided into 10 small groups in which they work for the week. Over the period the teaching staff at the Boyne River School consisted of 10 permanent teachers assisted by a second person who might be a student teacher, University of Waterloo Co-Op student or some person with an interest in the out-of-doors who would be hired for a short term. In addition the school had one administrator. During the study period the permanent staff of the school remained fairly consistent with a total of 18 teachers and 2 administrators having worked there over the 14 years of the study period.

To date, it is estimated that the school has had approximately 100,000 students through its program; 60,000 would have attended between 1973 and 1986, which is the study period.

The premise that is used at the Boyne River School in regard to outdoor education is that the school will teach any topic in any

subject as long as most of the teaching is in the out-of-doors. Having said this, it must also be added that a component of all programs is also environmental education, whether the program is experiential or art-based.

The former students who are studied in this paper are now in the age range of 20 to 40+ years of age. This had one advantage for the study, as these people would have little difficulty filling out a questionnaire.

In September 1972 the original staff members of the Boyne River School held weekly meetings to formulate the goals and programs of the school, although at this time, these people were employed in other jobs. In January 1973 these meetings became daily as the school was officially inaugurated, although no students were visiting yet, as the school buildings were not quite ready. In the third week of February 1973, the first students arrived for their first week at the Boyne River School.

The original goals of the school that the original staff agreed to were never recorded in any permanent document but are still the goals in evidence today. These original goals are now recorded in school documents and as well a formal mission statement has been developed for the school. The mission statement of the school is, "To help people realize their kinship to the planet earth and to live responsibly upon it".

Learning by Direct Experience

C. Hopkins, the Boyne River School's first principal stated, "the more senses involved - the greater and deeper the learning will be." This concept has been voiced by many others (Kingsmill 1997, Finley et al 1992, McDonald 1994, Smidt 1995).

Urban children spend most of their education in isolation from nature and natural processes. The Boyne River School was designed to ensure that Toronto students have an opportunity to spend time in the natural environment as an integrated part of their education. Wals (1992 and 1994) argued that educators must be careful that Environmental Education does not become elitist, only for those who can afford it. The Toronto Board of Education has tried to avoid this pitfall by mandating that all students will attend an outdoor education centre in either grade five or grade six as part of their curriculum and then at least once more in their school career. The cost for this week has been kept at a minimum and no student is excluded because they cannot afford it. Most students in the Toronto Board of Education also get a second chance to attend a centre either in Senior School or High School. In fact, some students who are very keen on outdoor education manage to attend a centre several more times in their school career.

As was stated earlier in this chapter the goals of the Boyne River School have remained consistent from the beginning of the school. These goals are now recorded in school documents and are as follows.

Boyne River School Goals for Students

Taken from *Information to Parents*

1. to learn by direct experience,
2. to discover through individual and group experience the value of outdoor pursuits,
3. to develop and improve skills that enable one to enter the natural environment with care, confidence and sensibility,
4. to learn about the environment and that environmental issues are complex and important,
5. to develop a sense of history about the land and the people that have inhabited it,
6. to learn to work and live together cooperatively.

Goals for Boyne Programs

Taken from *Information to Parents*.

1. We believe in the "primacy of experience" - that people learn best by doing.
2. We believe it is important to encourage everyone to achieve their "personal best" and to leave feeling their time here has been special.
3. We work at building self-confidence in students in every activity.
4. We are here to help provide future adults with the ability to understand and positively affect the environment.
5. We believe we have a duty to respond to current environmental issues creatively and responsibly.

6. We believe our program must make a meaningful contribution to the curriculum developed by homeroom teachers.
7. We believe we must continually evaluate our program and respond thoughtfully to the results.

These goals and mission statement, although formalized in these exact words only in 1991, are still the same goals that the staff had when the school opened in 1973.

Program

Has there been much change in the program over the years? Two sample programs are shown (Figures 2 and 3). One is for a program prepared for Blythwood school from 1973-1974 and one is for Bowmore school in 1985. Throughout this time period, the first day's program has remained the same. It is an introductory session, usually in the form of a hike. Although each of the instructors has different methods for this introductory session, each uses it to get to know the students, let the students know the expectations for the week and let the students get to know their teachers. This session also lets the students know that this week of their schooling will be very different from what they are used to in their home school. As one teacher put it "I use this hike to open the students' senses". It is also at this time that environmental issues will start to be introduced.

Figure 2: Sample Program For 1973/4 From School Files

| | | | | |
|---|--|---|--|---|
| Week <u>42-24</u> School <u>Blythwood</u> 73-74 No. <u>8627</u> Students: <u>8627</u> Total <u>JK</u> Leader <u>John</u> | | | | |
| Boyne River Staff 1. John 2. Hugh 3. Gord G. 4. Barb + Bob Home School Teachers Bill Phillips Gord Malden Willa Cressman | TUESDAY: 1. Orienteering 2. Sugaring 3. A.D.H. 4. Stream | WEDNESDAY: 1. A.D.H. 2. A.D.H. 3. Woodlot 4. A.D.H. | THURSDAY: 1. Woodlot 2. Stream 3. Orienteering 4. Woodlot | FRIDAY: 1. Birding 2. Woodlot 3. Stream 4. Orienteering |
| MONDAY: 1. } 2. } 02 - Birds 3. } 4. } Sheep-sheering 02 | 1. Stream 2. Orienteering 3. A.D.H. 4. Birding - Sugaring | 1. A.D.H. 2. A.D.H. 3. Woodlot (birding) 4. A.D.H. | H.R.T. PROGRAM | Group Teachers 1. <u>SCAMMIE SURETT</u> 2. <u>GEORGE HOD</u> 3. <u>CATHY NIMO</u> 4. <u>NANCY IRELAND</u> |
| Follow up Period 1. 02 F.U. compass prep. Stream prep. 2. 02 F.U. Sugar } Compass } 3. A.D.H. PREP WOODLOT PREP 4. Letters. Stream prep. | (6:25-7:45 p.m.) 1. Stream prep. 2. Orienteering F.U. Bird F.U. <u>A.D.H.</u> 3. CRAFTS. 4. Stream F.U. Sugaring Crossword | 1. Mapwork Tree Prep. 2. Stream Prep (Film) 3. ORIENTEERING PREP 4. Woodlot prep. | 1. Woodlot F.U. Bird prep. 2. Wood Prep Stream F.U. 3. CRAFTS STREAM PREP 4. Woodlot F.U. compass prep | Special Equipment (Buses, lunches, etc.) Van - Mon. |

Figure 3: Sample Program For 1985 From School Files

"Communities"

WEEK 18-22-85 SCHOOL BOYNE RIVER # OF STUDENTS 8 G68 TOTAL 68 LEADER Plan

| Boyne Staff | TUESDAY | WEDNESDAY | THURSDAY | FRIDAY |
|-----------------------------|----------------------------|----------------------------|--------------------------|--|
| 1. <i>Bob</i> | 1. MAPLE SYRUP / WOODLOT | 1. BIRDING | <i>Home</i> | 1. SKI / M.E. |
| 2. <i>Felix</i> | 2. Woodlot / Sawmill | 2. ANIMAL HABITATS | <i>Home</i> | 2. SKI / M.E. |
| 3. <i>George</i> | 3. Animal Hab | 3. Birds | <i>Home</i> | 3. COMPASS |
| 4. <i>John</i> | 4. Woodlot + Sawmill visit | 4. ANIMAL HABITATS | <i>Home</i> | 4. COMPASS |
| 5. <i>Sharon</i> | 5. X-ski | 5. Compass Skills | <i>Home</i> | 5. Bird Study |
| BOYNE SCHOOL STAFF | | | | |
| 1. <i>John</i> | 1. ANIMAL COMMUNITIES | 1. COMPASS SKILLS | 1. TOWN STUDY | Group Teachers |
| 2. <i>Hiker</i> | 2. Compass Skills | 2. Town study | 2. Birding | 1. _____ |
| 3. <i>Intro Hike</i> | 3. Woodlot | 3. Town | 3. Ski | 2. _____ |
| 4. <i>Hike + Wood</i> | 4. TOWN STUDY | 4. BIRDS | 4. MAPLE SYRUP / ASSE'S | 3. _____ |
| 5. <i>Gr. Hike (ASSE'S)</i> | 5. Woodlot (Hike Sign) | 5. Animal Community | 5. Town Study | 4. _____ |
| FOLLOW-UP | 1. WOODLOT / ANIMALS | 1. BIRDING / COMPASS | 1. TOWN (SKI PREP?) | Special Equipment (buses, lunches etc) |
| 1. COMMUNITIES / FOOD WEBS | 2. Woodlot F.M. | 2. Animal F.M. | 2. Bird F.M. | 3. Van. Thurs pm. |
| 2. Hike F.M. / Food chains | 3. Animal F.M. | 3. Bird F.M. | 3. COMPASS - TOWN | 4. VAN. TUES PM |
| 3. Hike F.M. | 4. WOODLOT - TOWN | 4. BIRD F.M. + ANIMAL F.M. | 4. TBA | 2. Van. Wed PM. |
| 4. Hike F.M. / Food chains | 5. Compass prep | 5. Animal F.M. / Town prep | 5. Bird prep / Town F.M. | |
| 5. SKI prep. | | | | |

Looking at the two programs taken from the Boyne River School files, it can be seen that there are many similarities. Each program has an adventure or experiential component. In the 1973-74 program it was a half day of orienteering and an all-day hike in which the students had to cook their own lunch as well as use a map to find their way. In the other 1985 program the students had a half day of skiing as well as a half day of orienteering. In each program there was an environmental component, be it woodlot study, stream study or bird study. The programs in 1998 show these same components. An introductory hike, an experiential component of skiing or ropes course, and an environmental component of birding, animal study or woodlot study as well as many other possibilities.

How have the programs changed over the years? The programs are still tied to the curriculum of each grade that attends the school, so as the curriculum has changed, the Boyne River School program has changed to meet these new demands. The main changes in the curriculum from 1973 to 1986 were in the grade level that particular concepts were taught rather than in the concepts themselves. All programs are on a request basis from the homeroom teacher so that the program best meets the needs of their students. From the beginning of the Boyne River School, a staff member has visited the homeroom class two to four weeks in advance of the class visit to decide with the homeroom teacher exactly what the program will be for the week. This part of the planning process still takes place today. As a result of this process the emphasis for the week may vary from socialization to English development or a stress on particular environmental issues. Although the emphasis for the program may change, many of the topics and activities remain the same.

Experience

Another way that the program has changed is in the presentation by the staff. Originally most of the staff did not have much experience teaching in the out-of-doors. The staff at the school has remained fairly constant, and by 1986 the staff had gained a great deal of experience. These staff members actively sought out other centres to exchange with and to visit. As a result, centres in Australia were exchanged with as well as centres in the

United States such as Michigan, New Jersey, Wisconsin, Florida, California and Illinois. Centres in Ontario, Quebec, Alberta and British Columbia were also visited or exchanged with in the survey time period. To further add to the expertise of the staff at this time some new staff members were hired from the British Isles and other Boards of Education in Ontario.

School Location

The location of the school was chosen after the staff from the Toronto Island School conducted a search in a one hour drive radius from the schools it was to serve (See map, Figure 4). The site was one of several found and the particular site was chosen as it had a variety of terrain, including open fields, forest, ponds, streams, river valley and wetlands.

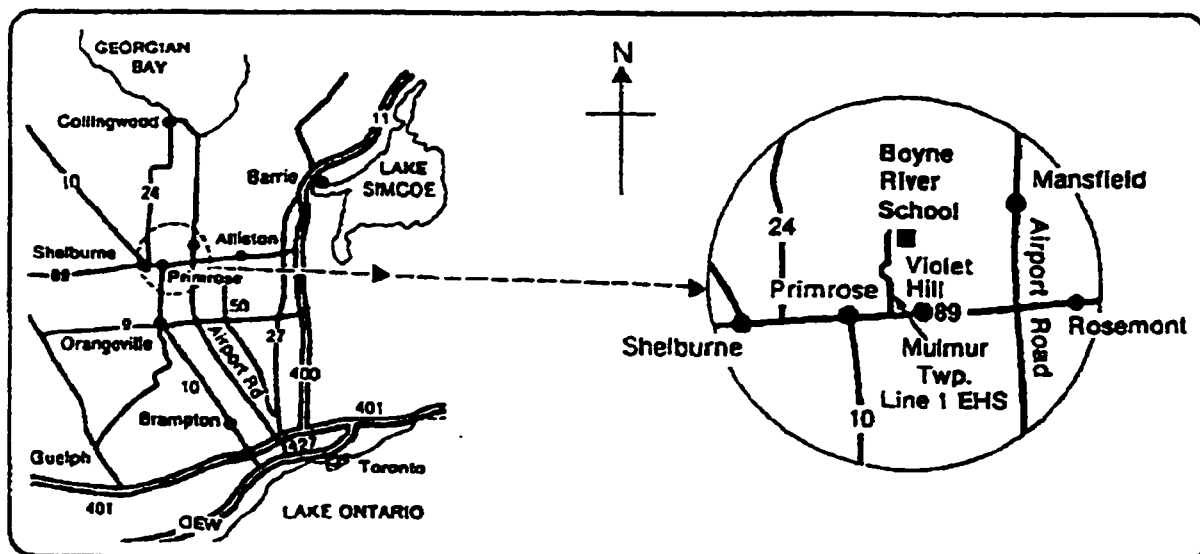


Figure 4: Location Of Boyne River School

The School Structures

The school has a large central complex constructed in 1972, consisting of a main building with dining room, common room, offices and two dorm buildings attached by tunnels to the main building. Spread around the property are a number of other buildings. At the back of the property there is a shed used as a shelter for winter ski trips and for cook outs. Two cottages that were on the property when the school board bought the property are used to store equipment for skiing and bee studies. There is also a log cabin on the site built by students from materials off the school property. A stack wall building also partially built by students is used as a sugar shack for the schools' maple syrup operation. There is a large sawmill with a craft shop and accompanying drying, storage shed and another building used for maintenance as well as another craft shop in this building. One other small cottage that had existed on the property when purchased has since been replaced by a structure that uses alternative energy and a solar aquatic water treatment system. This building is now called the Ecology Centre.

School Property

In 1973 when the school opened the property consisted of 46 hectares. Shortly after opening, another 40 hectares was purchased. In the first few years of the school a further 40 hectares was purchased. Then in 1989 a further 40 hectares was purchased bringing the school's total acreage up to its present 166 hectares.

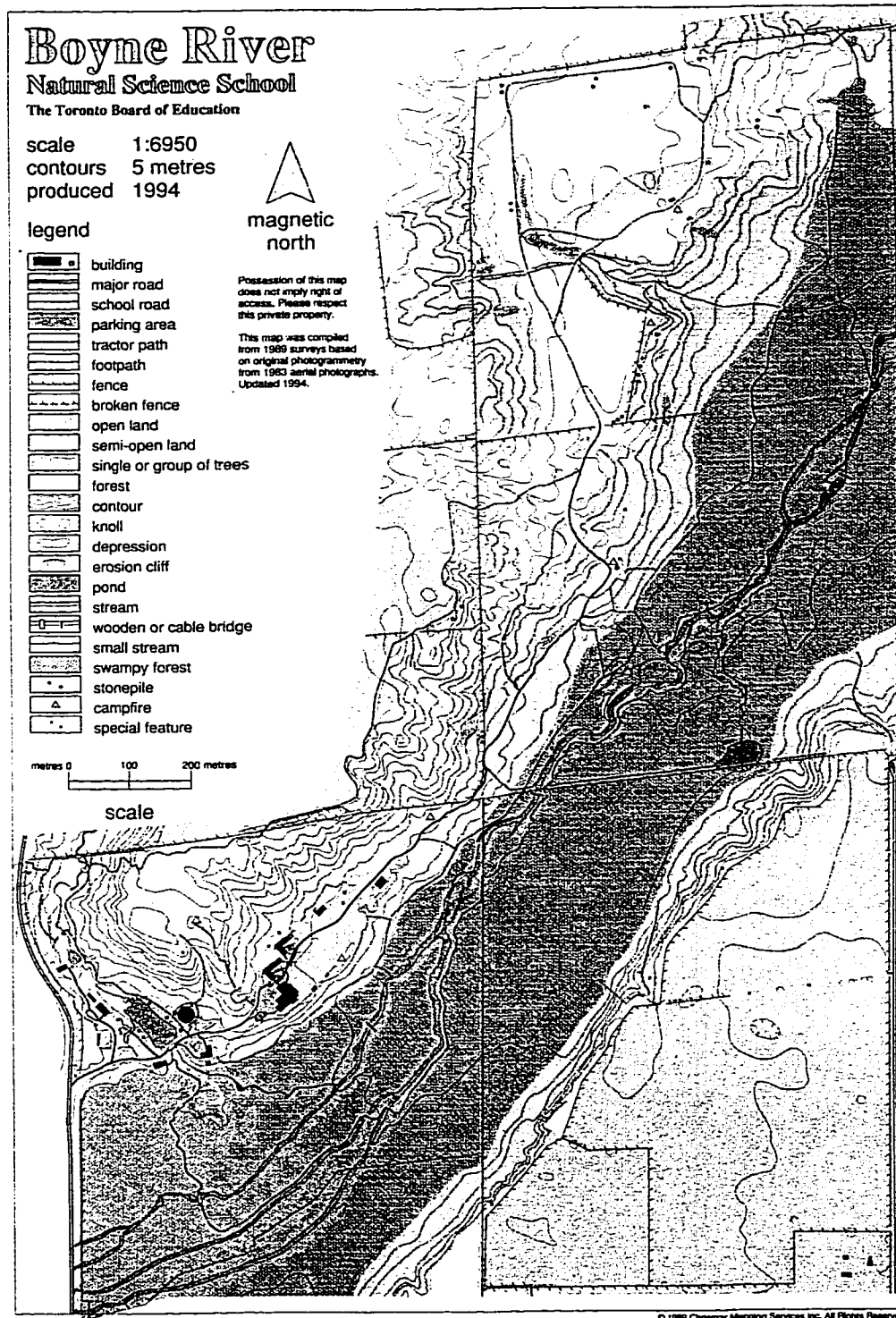


Figure 5: Boyne River School Site Map

Further Resources

Adjacent to the school is a further 800 hectares that was designated as The Boyne Valley Provincial Park in the 70's but as yet has not been developed. The school has full use of this property for its studies. Along with these resources, the school also has the Bruce Trail running through its property.

One other valuable resource the school has is two small school buses used to transport students to local farms, the Dufferin County Museum and nearby towns. The Boyne River School teaching staff have their bus driver's licenses to make the use of these buses convenient.

CHAPTER 5

Survey Results

Background

This chapter looks at the results of the survey. The first page of the survey was designed to obtain some background on the respondents. Question 1 in part one of the survey asked the respondents to circle the dates they had attended. Table 1 shows the years and the number of people who attended in those years. In response to this question only 2 people did not give the year in which they attended giving a valid response rate of 98.4%.

Table 1: Number of Respondents Attending in Each Year Of Study

| Year of Attendance | Number of Responses in that Year |
|--------------------|----------------------------------|
| 1973 | 4 |
| 1974 | 3 |
| 1975 | 9 |
| 1976 | 9 |
| 1977 | 14 |
| 1978 | 10 |
| 1979 | 16 |
| 1980 | 12 |
| 1981 | 8 |
| 1982 | 18 |
| 1983 | 8 |
| 1984 | 12 |
| 1985 | 8 |
| 1986 | 27 |

The greatest number of respondents attended in 1986. However there were a large number who attended in the late 70's. The smallest number of replies are from the first two years the school was open, but this number 4 from 1973 and 3 from 1974 still represents 5.65% of the respondents.

The people who answered the survey had attended the school when they were in grades four through thirteen or doing their OAC's. Table 2 shows how many people attended in each grade.

Table 2: Number of Respondents Attending in each Grade Level

| Grade | Number of respondents who visited in that grade |
|-----------------|---|
| 4 | 1 |
| 5 | 21 |
| 6 | 53 |
| 7 | 34 |
| 8 | 24 |
| 9 | 7 |
| 10 | 5 |
| 11 | 5 |
| 12 | 3 |
| 13 | 2 |
| Do not remember | 1 |
| No response | 3 |
| | |

The valid response rate for this question was 97.6% with 3 people not responding to this question.

The respondent's participation grade comes close to the breakdown of students between elementary and secondary school in the survey time frame, which was about 20% secondary and 80% elementary. The respondents were 14.19% secondary and 85.81% elementary. The greatest number of these students had attended the

school in grade six, 53 of those who responded. This reflects the Board of Education's policy at the time the survey covers, of having all grade six students attend one of their outdoor centres.

The second part of question 2 was to indicate how many times each person had attended. This is shown in table three.

Table 3: Number of times respondent attended the Boyne River School

| TimesAttended | Number of Responses |
|---------------|---------------------|
| 1 | 91 |
| 2 | 31 |
| 3 | 2 |

The valid response rate for this question was 99% with one person not indicating how many times they had attended.

The greatest number of respondents, 91, attended the school once, while 31 attended twice. The Toronto Board of Education owns two centres and also uses conservation authority centres where the students may have had a second visit.

These numbers represent the number of times, the grades and the years the respondents attended in the study time period. Some of these people attended more times, in other grades and other years, but outside of the study period. For the purpose of this study only those visits that fell in the study time frame were counted.

Question 3 asked the respondents to list the schools they had attended when they visited the Boyne River School. To this question there was a valid response rate of 97.6% with 3 people not

answering this question. Of the 128 schools that had attended the school in the survey time frame, the respondents represented 73 of these schools, or 57.03%. For a complete list of the schools attended see Appendix B.

Question 4 asked the respondents to indicate their gender.

Table: 4: Response Rate By Gender

| Gender | Number Responding |
|--------|-------------------|
| Female | 65 |
| Male | 60 |

The valid response rate for this question was 100%.

The group was 52% female and 48% male. This closely resembles the gender mix of the students attending the school as the dorms are divided to take equal numbers of boys and girls.

The 4 questions on page 1 of the survey give the make-up of the people who responded to the survey.

Part 2 of the Survey

The next section of the survey consists of 25 questions, numbered 1 through 25, designed to find what impact the visit to the Boyne River School had on the respondents. The questions were placed in a random order on the paper. As a result the findings are not given in numerical order, but rather in order of how they fit with the study.

The results of the second part of the survey are presented in table and graph form.

Satisfaction/Enjoyment Level

Questions 13 and 23 test the satisfaction level of the people who responded to the questionnaire. Table 5 and Figure 6 present the results of Question 13. “I have positive memories about my visit to the Boyne.”

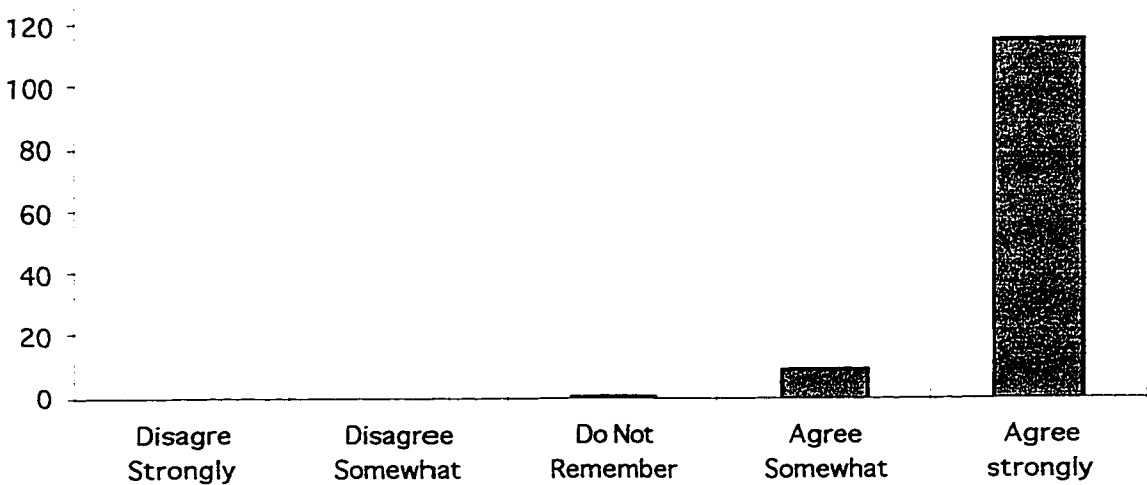
Table 5: Responses to Question 13

“I have positive memories about my visit to the Boyne.”

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 0 | 1 | 9 | 115 |

The valid response rate for question 13 was 100%.

Figure 6: “I have positive memories about my visit to the Boyne.”



Almost all of the respondents 124 out of 125 had positive memories of the Boyne River School as a result of their personal experiences. There was only 1 person that did not respond positively to this question and that person responded that they did not remember.

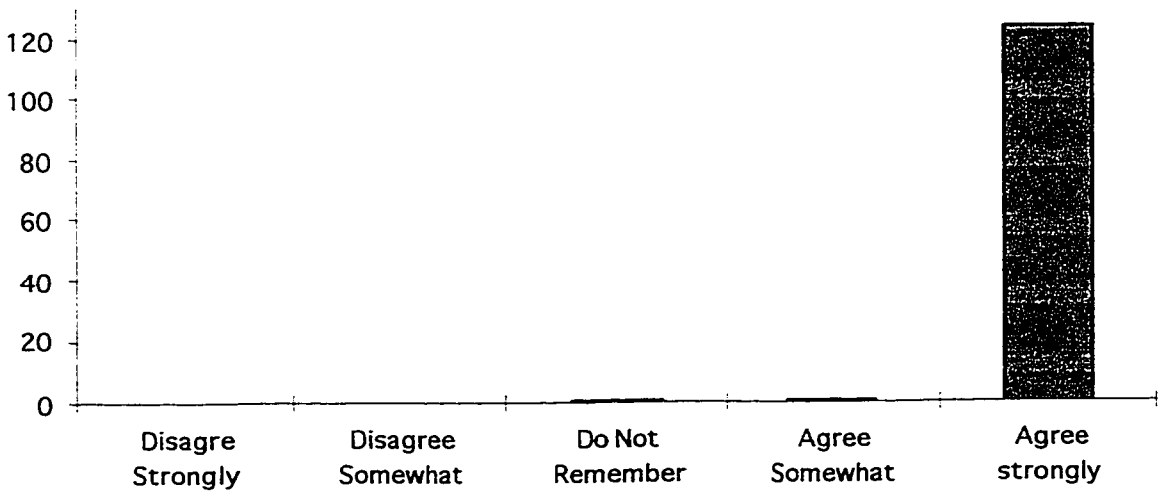
Question 23 asked the respondents to give an opinion as a response to: “A visit to an outdoor education centre during school time is a worthwhile educational experience.” The results of this question are presented in Table 6 and Figure 7.

Table 6: Responses to Question 23

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 0 | 1 | 1 | 123 |

The valid response rate for Question 23 was 100%.

Figure 7: “A visit to an outdoor education centre during school time is a worthwhile educational experience.”



Out of 125 respondents, 123 agreed strongly that a visit to an outdoor education centre during school time is a worthwhile educational experience. Therefore, the findings from question 13

and 23 reveal that the respondents feel that they have positive memories of the visit to the Boyne River School, and that in general outdoor education centre visitation is a worthwhile educational experience.

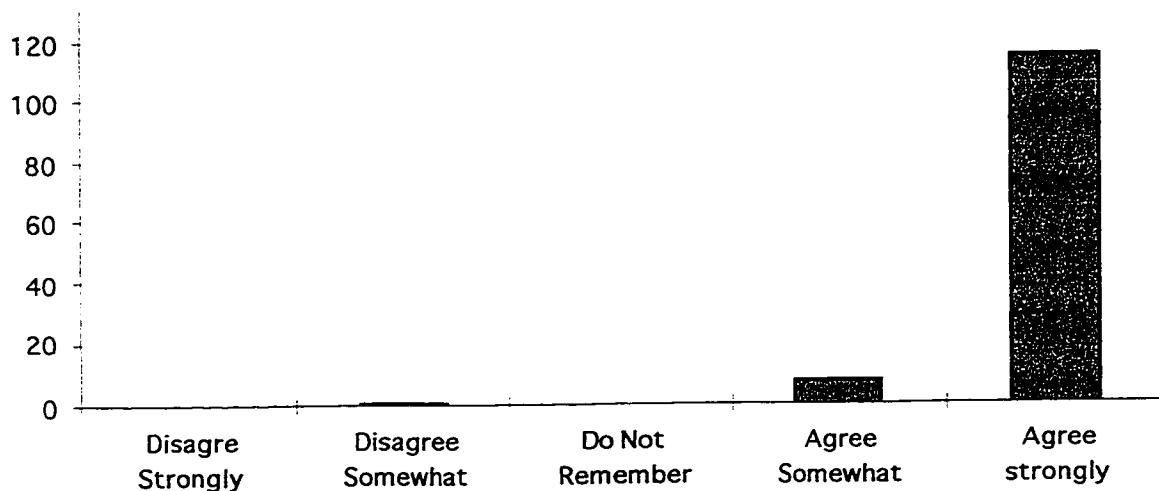
Question 19 stated: "I had fun at the Boyne." The results of this question are shown in Table 8 and Figure 9

Table 7: Responses to Question 19

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 1 | 0 | 8 | 116 |

The valid response rate for Question 19 was 100%.

Figure 8: "I had fun at the Boyne."



Question 19 shows enjoyment in the program as all students, but one, had fun during their visit to the Boyne River School. If these people did not have fun while at the Boyne it would have been difficult to get the rates that were found in questions 23 and 13.

The responses to this question were also 99% positive with 116 of these people agreeing strongly to this question.

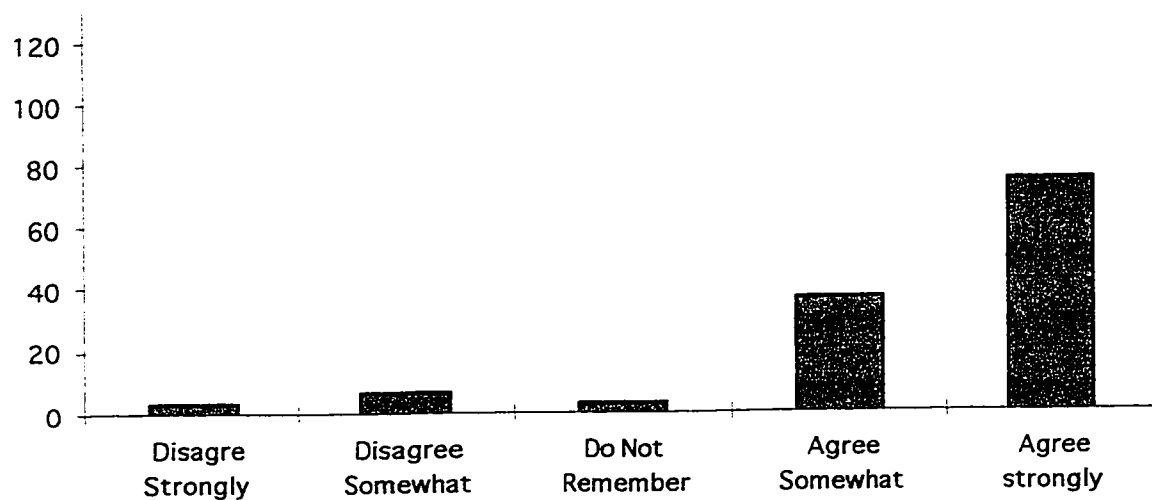
One of the ways these people enjoyed their time at the Boyne was socially as is shown by the responses to question 17 which read: "I enjoyed my time in the dorms at the Boyne." The results to this question are shown in Table 9 and Figure 10.

Table 8: Responses to Question 17

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 3 | 7 | 3 | 37 | 75 |

The valid response rate for question 17 was 100%.

Figure 9: "I enjoyed my time in the dorms at the Boyne."



The time in the dorms is the largest block of unstructured time during which the students have to socialize with each other at the Boyne River School. The dorms, of which there are four, are large rooms that accommodate up to 36 students each. This type of

accommodation requires the students to learn to get along with each other and share the common space. It also gives the students a time to get to know each other better. As a result of their experience, 89% answered positively to this question. Of the 10 who did not enjoy their time in the dorms one can only speculate as to why since no explanation was given. It may be possible that they may not have liked the loss of privacy or because of their age found it difficult to live in close proximity to other people. Some of the high school students who have visited one of the Conservation Authority centres tell use how much they preferred the small rooms at these centres as compared to the large dorms at the Boyne River School. This information however was not mentioned in the survey, it is only because the author is at the Boyne River School that he has heard these comments over the years. Through further analysis of the responses we do know that there was no significant difference between the genders for this question, nor did visits to the countryside affect the response.

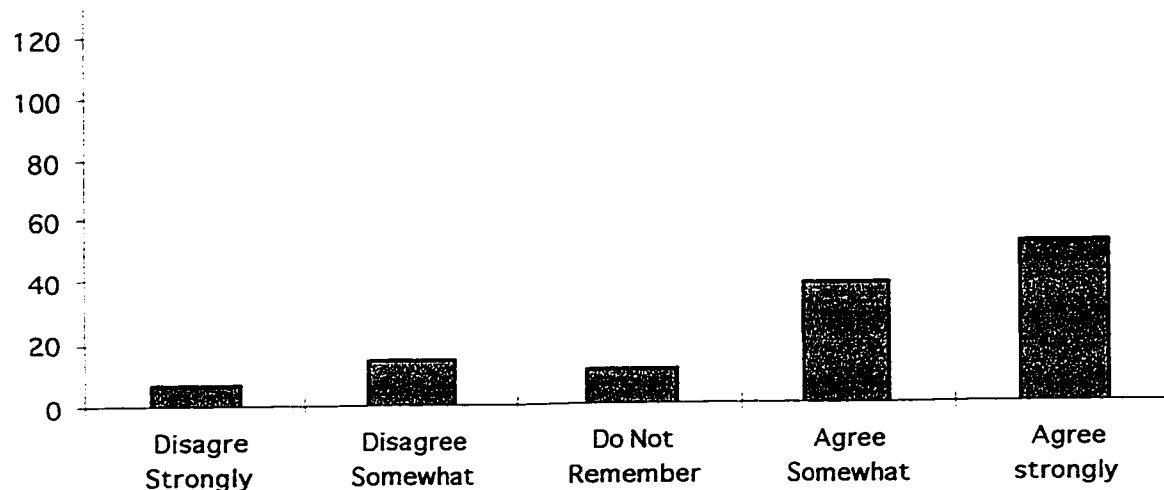
As a result of this social interaction did these people remember some of the other students they met at the Boyne?
 Question 14: “I remember some of the other students I met at the Boyne.” The results of this question are presented in Table 10 and Figure 11.

Table 9: Responses to Question 14

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 7 | 14 | 11 | 39 | 52 |

The valid response rate for this question was 98.4% with 2 respondents not replying to this question.

Figure 10: “I remember some of the other students I met at the Boyne.”



This question may have been ambiguous to some of the respondents with 73.98% of the students indicating they did remember some of the other students they met at the Boyne. Some of the schools that attended would have filled the Boyne River School and thus removed the opportunity for the students to meet new people as compared to weeks where several different schools attended. However the question did not state that these were new people that they had just met, they could have been students from their own school that they got to know better.

There were 21 respondents that indicated they did not remember other students they met at the Boyne and 11 who could not remember. This is 26.2% of those who responded to this question. Why did they not remember? Were they more interested in the

program and as a result did not spend as much time getting to know others? This would seem unlikely as 90% of the respondents indicated they enjoyed their time in the dorms which would have been socializing time when they would have the opportunity to get to know others. The other possibility is that they spent their time with their friends that they already knew.

Impact on Student

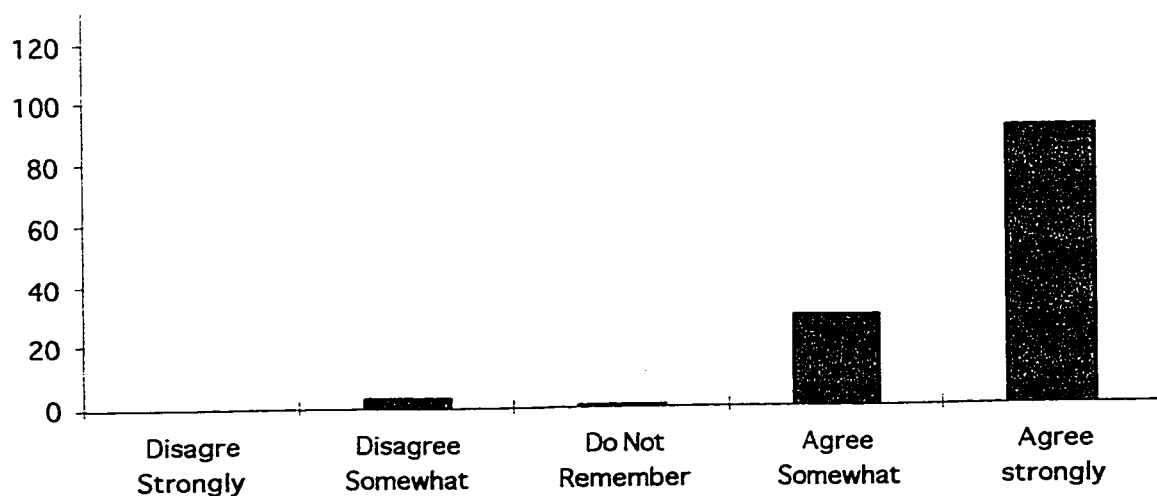
Question 1 read: "I talked about my visit to the Boyne with my friends many times after the visit." Table 7 and Figure 8 present the results of question 1.

Table 10: Responses to Question 1

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 3 | 1 | 30 | 91 |

Valid response rate for question 1 was 100%

Figure 11: "I talked about my visit to the Boyne with my friends many times after the visit."



There must have been a strong impact on these people for them to want to tell their friends about their visit many times. From this question however we cannot tell if this response to the visit is the result of satisfaction or dissatisfaction. However if we look at the answers to the rest of the questionnaire there is a strong possibility that this response was the result of a positive experience. The positive response rate here was 96.8%. What about the 3 people who indicated they had not talked a lot about their visit? Were these just naturally quiet people who did not talk a lot, or was it the case that they were not impressed enough by the program to want to talk to their friends about what they had done? These are questions that are not answered by this questionnaire.

Environmental Attitudes

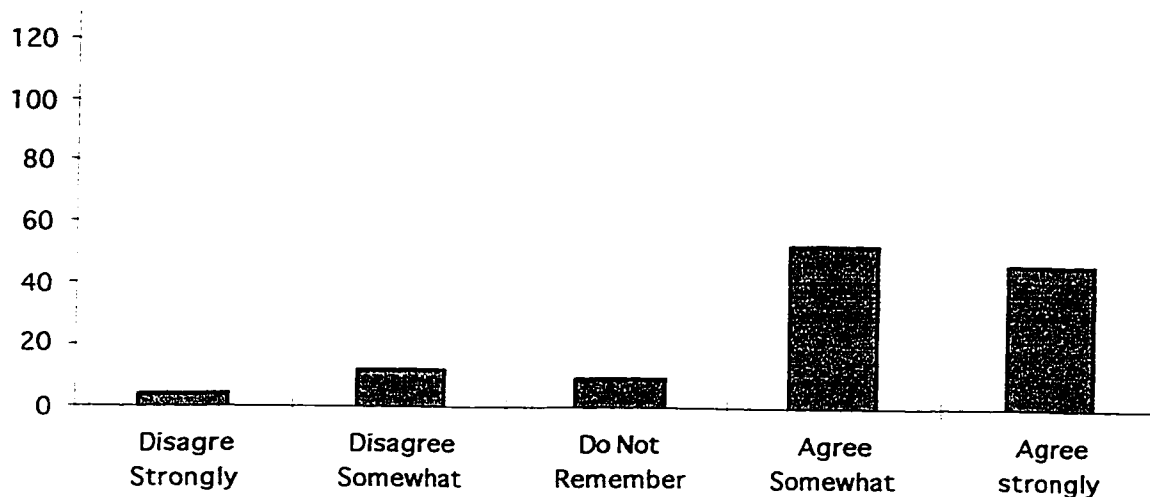
Did the visit to the Boyne River School affect how the respondents interacted with the environment after their visit? Question 10 stated: "I learned that I can make a positive difference to the environment because of my visit." The results of this question are shown in Table 11 and Figure 12.

Table 11: Responses to Question 10

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 4 | 12 | 9 | 53 | 47 |

The valid response rate for question 10 was 100%.

Figure 12: “I learned that I can make a positive difference to the environment because of my visit.”



Of the 125 respondents who answered this question, 100 reported learning that they can make a positive difference to the environment. This is a strong finding for an important educational objective. However there were still 20% of the respondents that did not feel they could make a positive difference. What can be added to the program to be sure that the other 20% learn this important lesson as well?

How did these people make this positive difference to the environment? Questions 2, 4, 9, and 11 gives some insight on how this was achieved. In question 2 we see that a change in attitude has taken place. This change would make a difference in what these people read and in the support they would give to issues involving animals and the environment.

In question 4 we see a fundamental attitude shift, or at least an attitude strengthening, occurred as a result of the Boyne River School program.

In question 9 we see that a large number of people made a life style change, and in question 11 we find that many of the respondents now understand the impact of their actions.

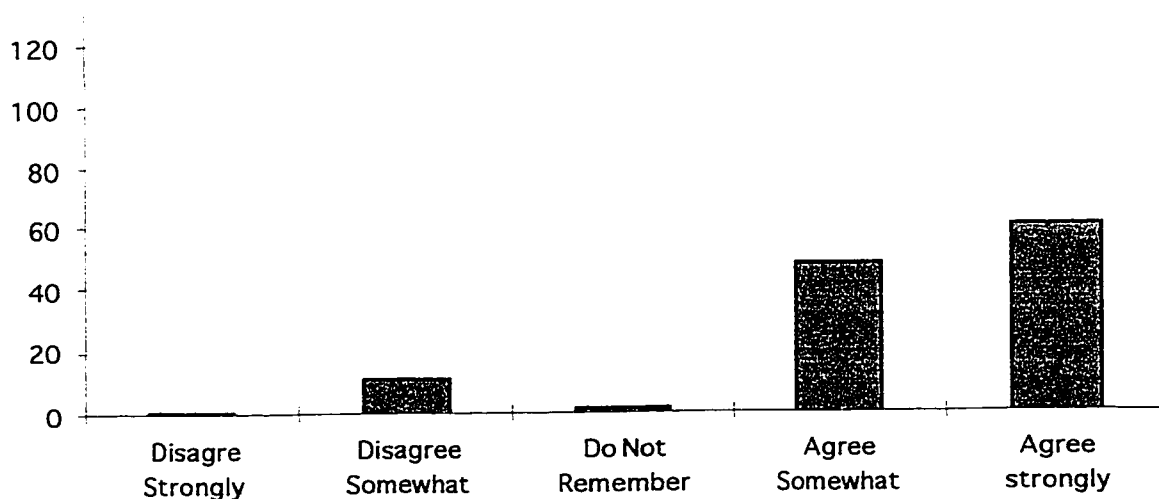
Question 2: “After my visit I became more interested in wildlife.” The results to this question are shown in Table 12 and Figure 13.

Table 12: Responses to Question 2

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 1 | 11 | 2 | 49 | 60 |

The valid response rate for question 2 was 98.4% with 2 respondents not giving a response to this question.

Figure 13: “After my visit I became more interested in wildlife.”



To this question 88.62% of the respondents indicated they became more interested in wildlife, presumably as a result of their visit to the Boyne River School. What did this increased interest lead to in later life? Did these people join wildlife conservation groups? Did they take vacations to view wildlife or just become more observant viewing it around their home? Unfortunately the data does not shed any light on these questions. Why did 9.7% not become more interested in wildlife as a result of their visit? Was it because as 1 respondent indicated she had taken part in a bird banding lesson where live birds were brought into the classroom and this had turned her off the lesson. This could have lead to a greater interest in wildlife or the other way around. Some students may also have become afraid of animals as a result of their visit although hopefully this is not the case. All of these possibilities must be kept in mind when designing program at outdoor centres.

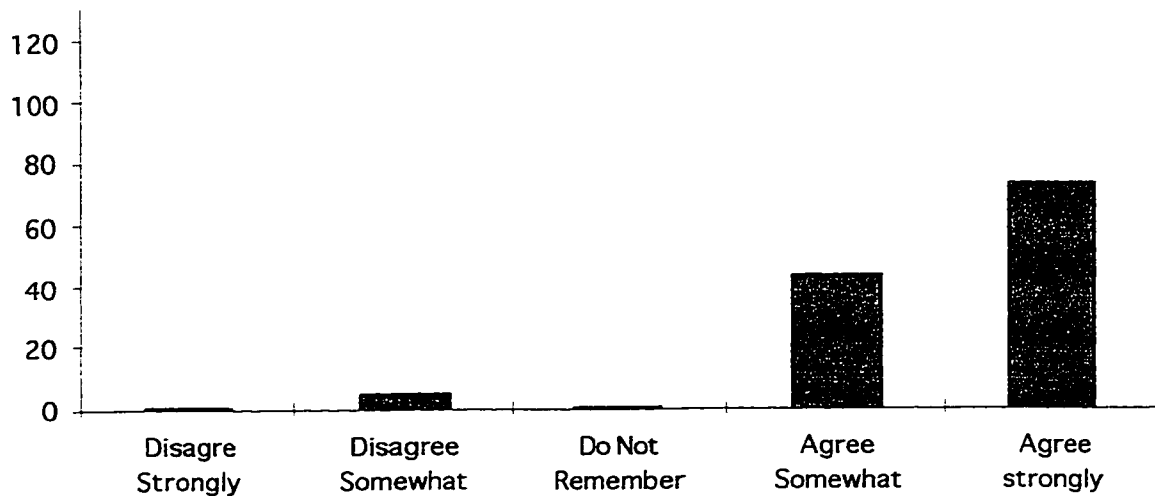
Question 4: "I gained more respect for living things." Table 13 and Figure 14 show the results of this question.

Table 13: Responses to Question 4

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 1 | 6 | 1 | 43 | 73 |

The valid response rate for Question 4 was 99% with 1 none response.

Figure 14: "I gained more respect for living things."



There was strong positive response to question 4 with 93.55% of the respondents agreeing that they had gained more respect for living things. This finding suggests a fundamental attitude shift, or at least an attitude strengthening, occurred as a result of the Boyne River School program. As a result, the assumption one could possibly draw from this is that these people would hopefully be more aware of the environmental issues that they would hear about within their society. If that were the case these people would be better able to deal with questions about the environment. Again there was a small percentage 5.65% that did not give a positive response to this question as well as 1 person that could not remember and 1 who did not respond to this question. There were no comments written in the surveys to indicate the reasons for the lack of change in these respondents, so once again we can only speculate.

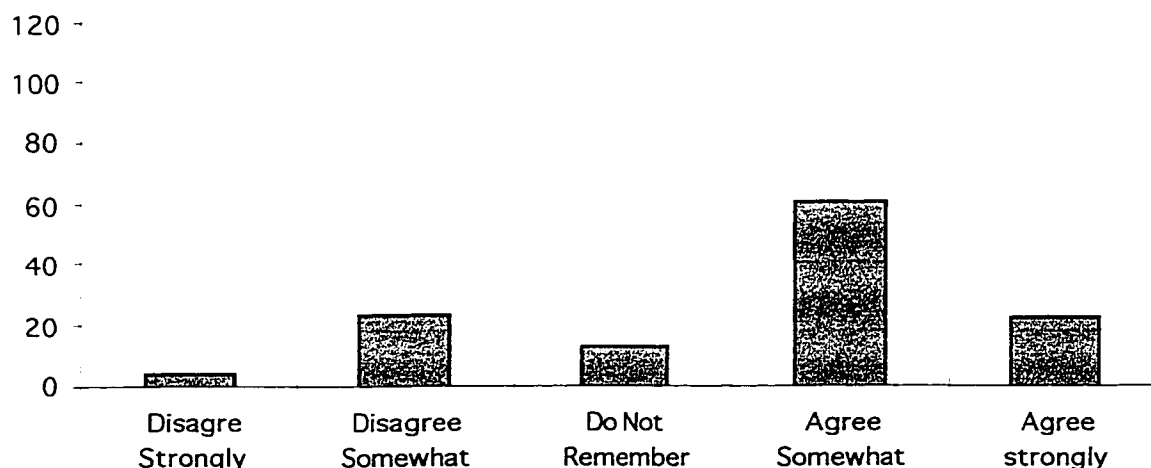
Question 9: “I made a lifestyle change. e.g. recycled, conserved water etc. “ The responses to this question are shown in Table 14 and Figure 15.

Table 14: Responses to Question 9

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 4 | 23 | 13 | 61 | 22 |

The valid response rate for Question 9 was 98.4% with 2 none responses.

Figure 15: “I made a lifestyle change. e.g. recycled, conserved water etc. “



The positive response to question 9 was modest, with 67.48% replying positively to this question. Although low, this response rate is still a large percentage indicating that these people made an actual lifestyle change as a result of their visit. Only 21.95% indicated they had not made a lifestyle change as a result of their visit with a further 11 who could not remember and 2 who did not

answer. Once again we can only speculate why this may have been. Perhaps it was because they were already living in an environmental friendly manner, perhaps the program did not direct them to a lifestyle change. This is a part of the program that definitely needs to be looked at as there was a significant number, a total of 32.52% of the respondents who did not make a lifestyle change as a result of their visit.

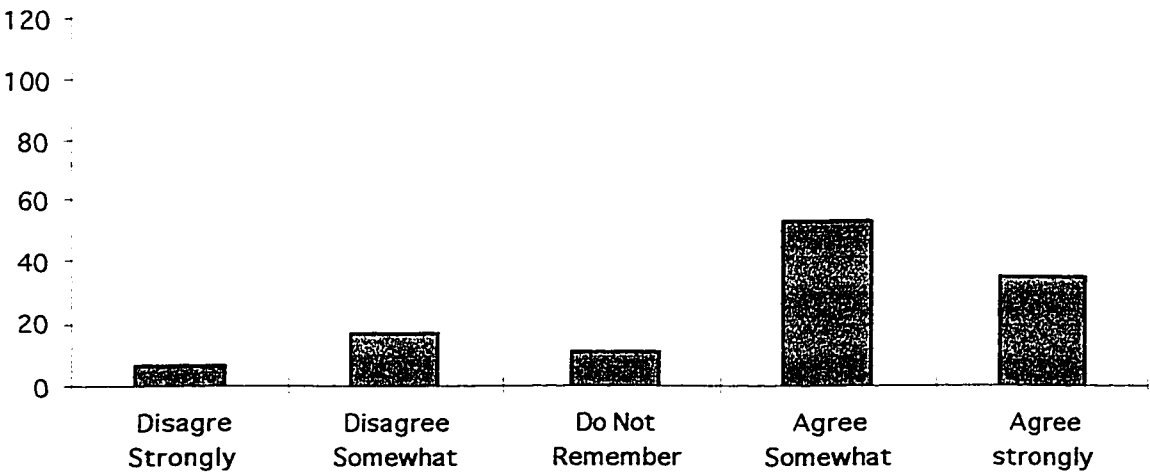
Question 11: “I consider the environmental impact of my actions due to my Boyne visit.” The results of this question are shown in Table 15 and Figure 16.

Table 15: Responses to Question 11

| Disagre Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|------------------|-------------------|-----------------|----------------|----------------|
| 7 | 17 | 11 | 54 | 35 |

The valid response rate for this question was 99% with 1 none response.

Figure 16: “I consider the environmental impact of my actions due to my Boyne visit.”



This is an important finding, as seven out of ten people who visited the Boyne program state that due to what they learned at Boyne they made a conscious decision to evaluate the environmental impact of their actions. This unfortunately still left 28.23% who did not indicate they would evaluate the impact of their actions. This is a significant percentage that has somehow been missed by the program. Hopefully some of the additions that have taken place to the program will have helped to reduce this percentage in the students that have come since the end of the study period.

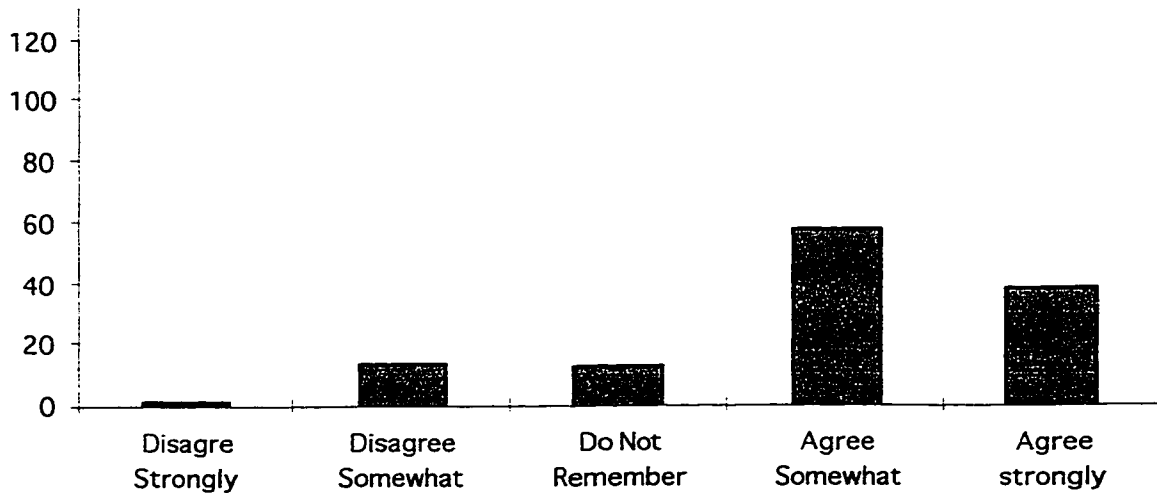
Question 5: “I felt more self-confident about solving problems.” The results of this question are shown in Table 16 and Figure 17.

Table 16: Responses to Question 5

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 2 | 14 | 13 | 58 | 38 |

The valid response rate for Question 5 was 100%.

Figure 17: : “I felt more self-confident about solving problems.”



Of the respondents, 76.80% felt more self-confident about solving problems. This would then impact on these people throughout their lives. This greater self-confidence would make many things in their lives much easier to tackle. But what of the other 23.20% that did not feel more confident, or at least could not remember? Hopefully this result from this large number of people is a result of the fact that they did not do any problem solving in their program. Once again this is a point that will have to be looked at in the program to see if the school cannot improve on this aspect of the program.

Activities and Skills Gained

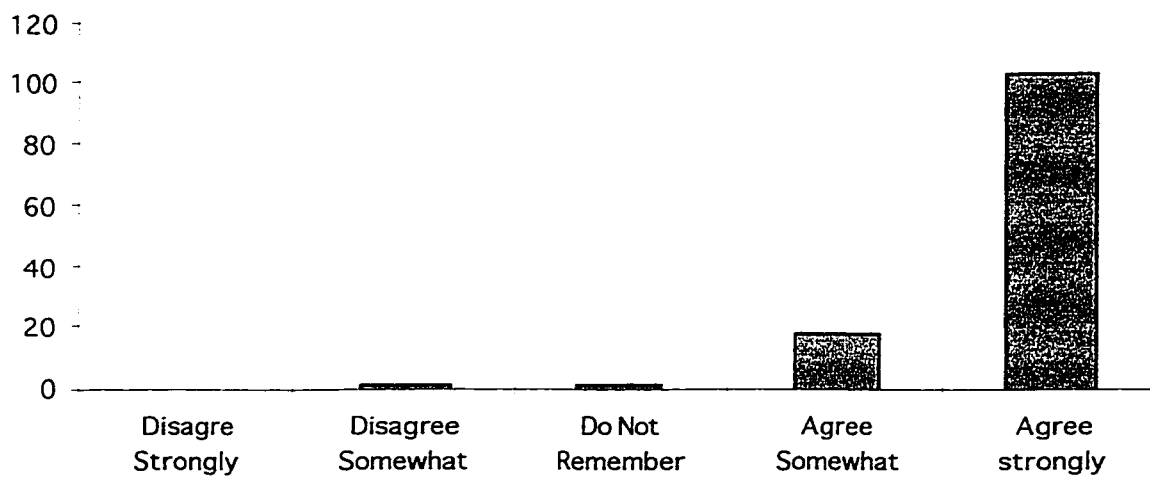
Question 8: “I like going on hikes.” The results of this question are shown in Table 17 and Figure 18.

Table 17: Responses to Question 8

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 2 | 2 | 18 | 103 |

The valid response rate for question 8 was 100%.

Figure 18: "I like going on hikes."



As a result of their visit to the Boyne, 96.80% of the respondents like going on nature hikes. This would give these people an activity that they could enjoy for life. It would also probably make these people more likely to want to preserve nature so they could enjoy it on their hikes. There was only a small percentage 1.60% who indicated they did not like going on hikes as a result of their visit.

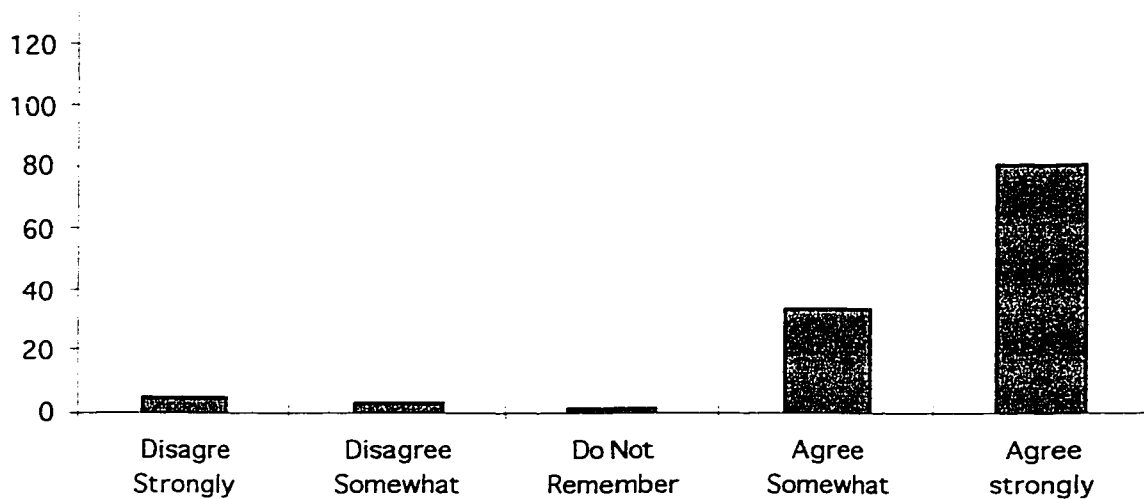
Question 6: "I participated in a new outdoor activity that I learned at the centre. eg. skiing, rock climbing, bird watching." The results of this question are shown in Table 18 and Figure 19.

Table 18: Responses to Question 6

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 5 | 3 | 2 | 34 | 81 |

The valid response rate for this question was 100%.

Figure 19: “I participated in a new outdoor activity that I learned at the centre. eg. skiing, rock climbing, bird watching.”



As a result of their visit, 92% of these people participated in a new outdoor activity after their visit that they learned at the centre. These people were introduced to an activity at the Boyne River School that they enjoyed enough to want to do it again. This introduction may have given these people an activity that they could enjoy for the rest of their life. This still left 6.4% who did not participate in a new activity after their visit. This might indicate that there is a need to investigate other activities that could be added to the program.

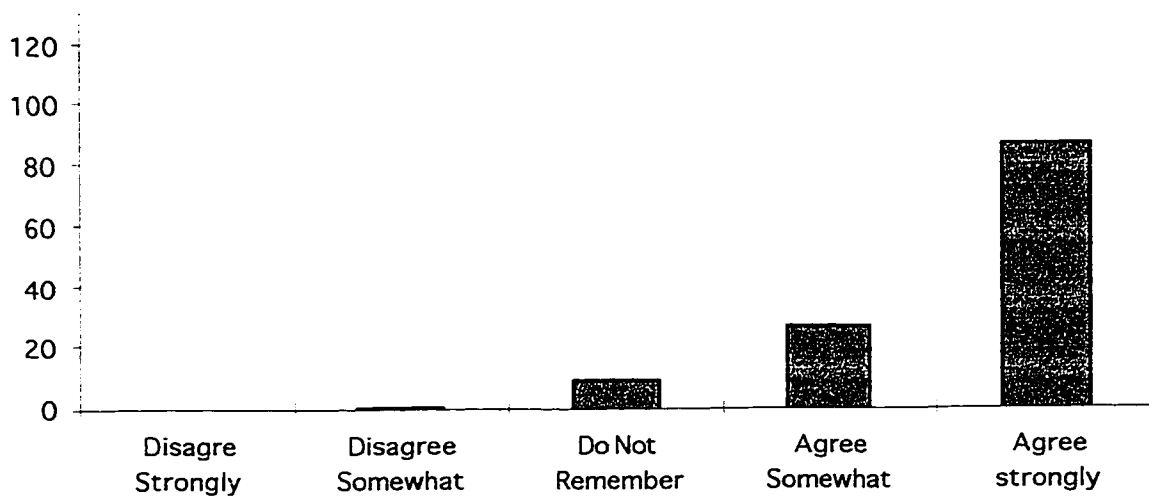
Question 12: “I learned a new skill at the Boyne.” The results of this question are shown in Table 19 and figure 20.

Table 19: Responses to Question 12

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 1 | 9 | 27 | 87 |

The valid response rate for Question 12 was 99% with 1 none response.

Figure 20: “I learned a new skill at the Boyne.”



Of those responding to Question 12, 91.94% learned a new skill at the Boyne River School. There are a lot of skills these people might have learned ranging from fire lighting, cooking their own meal, making their own bed, to co-operating with others to complete a task. All of these activities would be valuable assets to these people throughout their lives.

Methods of Learning

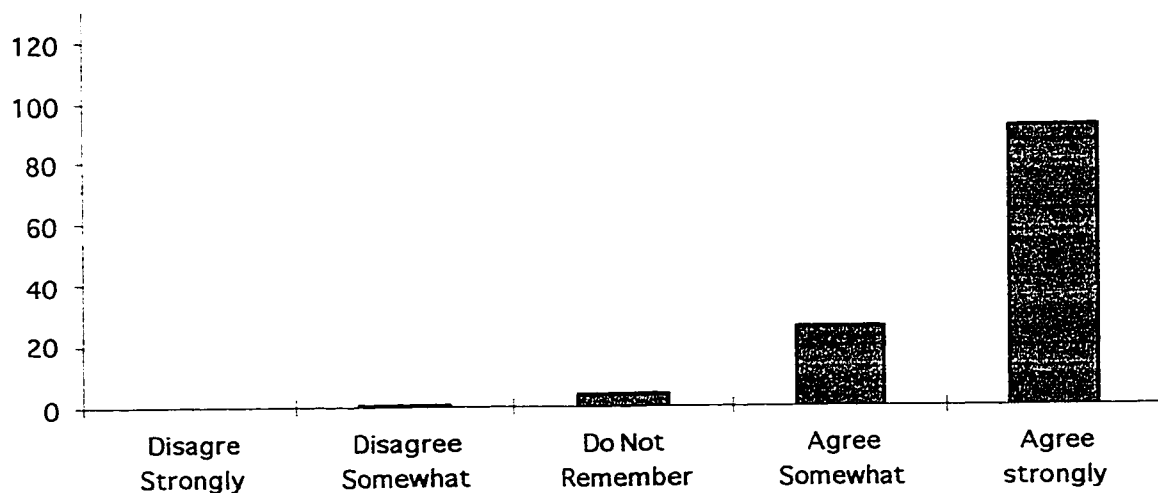
How were the new skills, activities, the enjoyment of going on nature hikes as well as the ability to solve problems achieved? One way may be seen in the answer to Question 20: "I liked working in small groups" shown in Table 20 and Figure 21.

Table 20: Responses to Question 20

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 0 | 1 | 4 | 26 | 92 |

The valid response rate for this question was 98.4% with 2 none responses.

Figure 21: "I liked working in small groups."



In answer to this question 95.93% of these people liked working in small groups. Obviously working in these small groups of 12 to 15

people, helped make it easier for the teachers to convey information to the students and to help them learn skills as they could spend more time with each student.

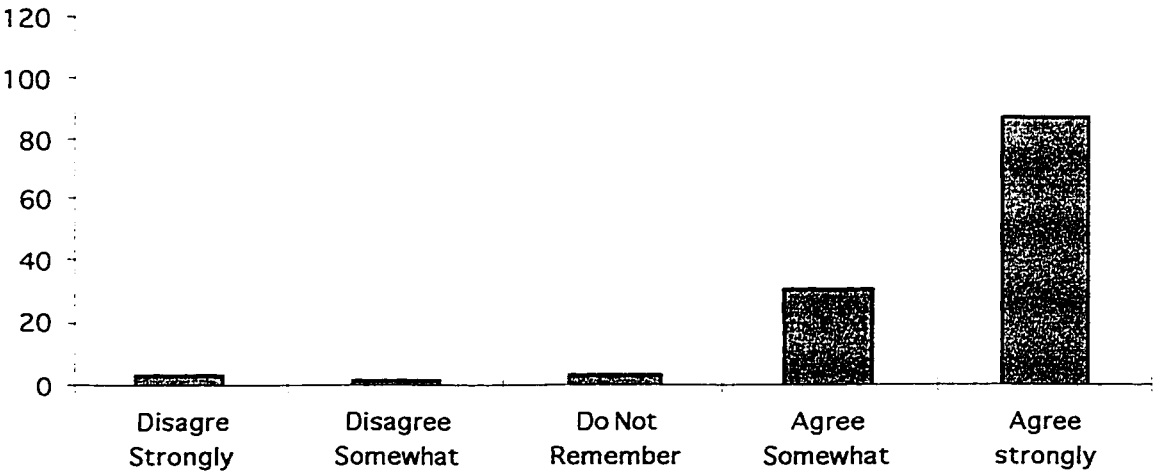
Question 18: “I learned more in the hands-on aspects of the Boyne program than I did in the classroom work.” The responses to this question are shown in Table 21 and Figure 22.

Table 21: Responses to Question 18

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 3 | 2 | 3 | 31 | 86 |

The valid response rate for this question was 100%.

Figure 22: “I learned more in the hands-on aspects of the Boyne program than I did in the classroom work.”



In Question 18, 93.60% of the people reported learning more from the hands-on aspect or doing the activity than from discussing

it or studying it in the regular classroom. This finding confirms that most people learn more by active participation in a relevant setting.

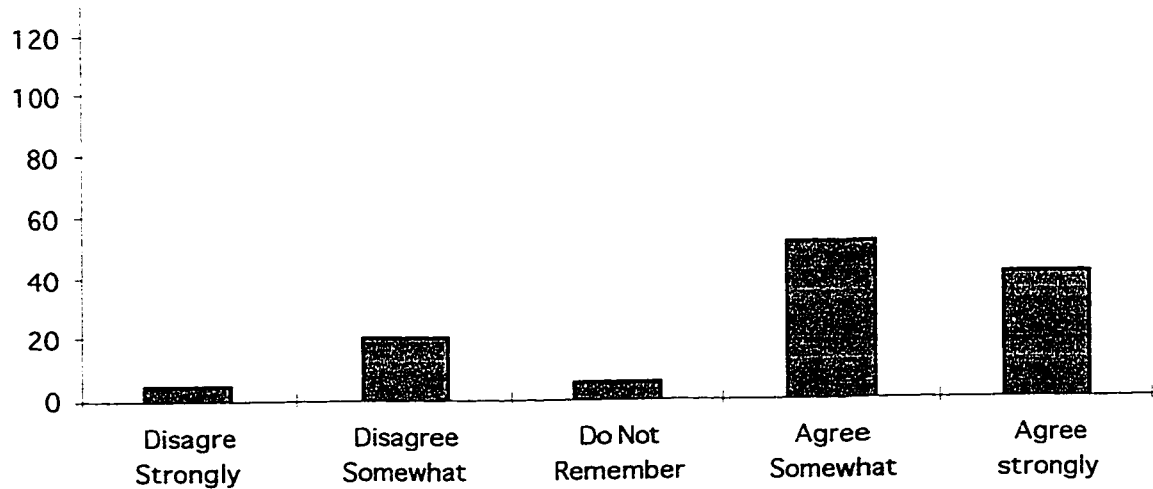
Question 16: “My visit to the Boyne helped me towards achieving my ‘personal best’ in many activities. eg. school, sports, job.” The results of this question are shown in Table 22 and Figure 23.

Table 22: Responses to Question 16

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 5 | 20 | 6 | 51 | 41 |

The valid response rate for this question was 98.4% with 2 none responses.

Figure 23: “My visit to the Boyne helped me towards achieving my ‘personal best’ in many activities. eg. school, sports, job.”



For 74.80% of respondents, their visit to the Boyne helped them achieve their personal best in other activities. This would seem to

indicate that learning that took place at the Boyne River School carried over into the every day lives of these people. Unfortunately for 20.33% of the respondents this goal of the Boyne River School was not achieved. There is definitely a need to look at this aspect of the program and try to make improvements.

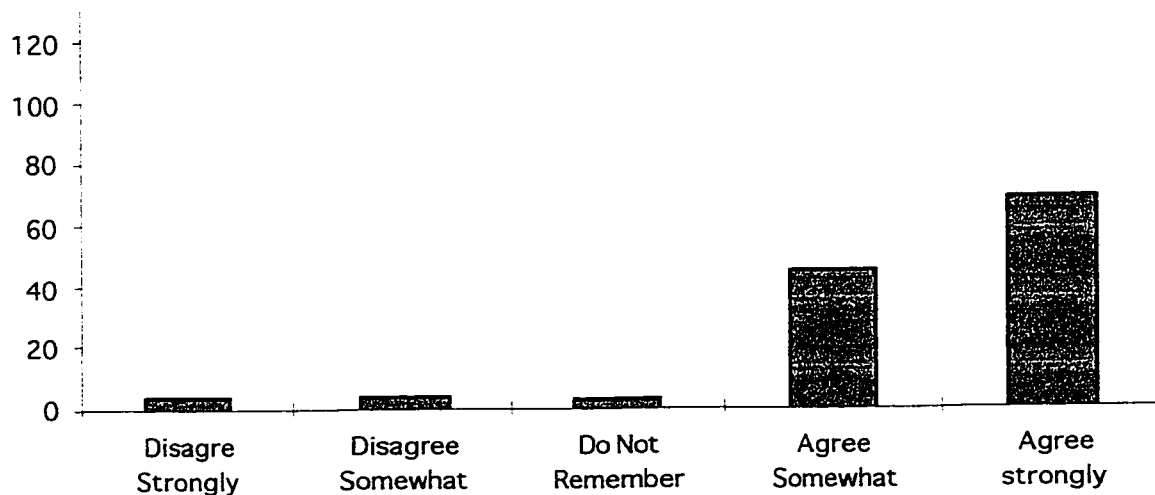
Question 15: "I learned to work co-operatively and live with others." The results of this question are shown in Table 23 and Figure 24.

Table 23: Responses to Question 15

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 4 | 4 | 3 | 45 | 68 |

The valid response rate for this question was 99% with 1 none response.

Figure 24: "I learned to work co-operatively and live with others."



To Question 15, 91.1% responded positively. Working co-operatively is definitely a very desirable skill to possess as it will help these people in all aspects of their lives. There were 6.45% who indicated

they did not learn to work together. Somehow the program missed passing this skill on to these students.

Outdoor Education

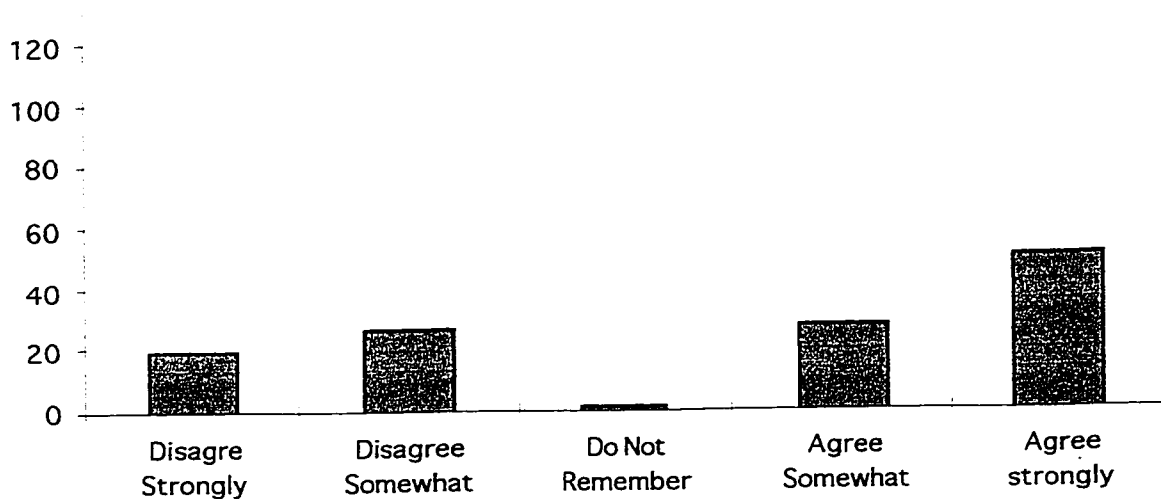
Question 22: “I visited the countryside a lot before my visit to the Boyne.” The results of this question are shown in Table 24 and Figure 25.

Table 24: Responses to Question 22

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 19 | 26 | 2 | 28 | 50 |

The valid response rate for this question was 100%.

Figure 25: “I visited the countryside a lot before my visit to the Boyne.”



The people who responded to the survey were split between those who had an opportunity to visit the countryside a lot before their visit, 62.40% and those who had not had the opportunity, 36%. The

majority of respondents were frequent countryside visitors before they visited the Boyne River School. This finding shows that of the group of people who responded to the survey many children did get a chance to visit the countryside outside of the school programs. There was still a significant 36% percent that did not have this opportunity and this needs to be addressed.

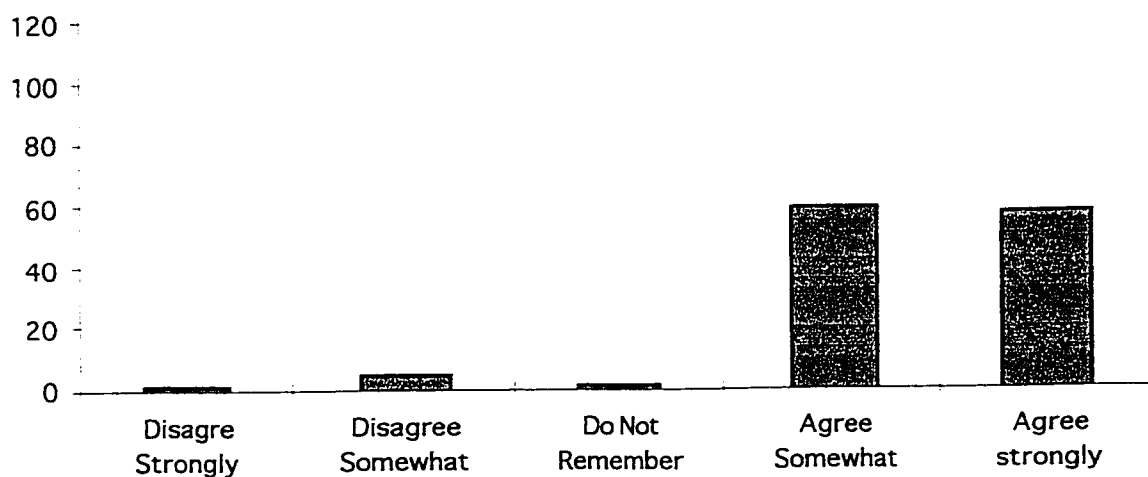
Question 3: "I felt more comfortable in the out-of-doors after my visit." The responses to this question are shown in Table 25 and Figure 26.

Table 25: Responses to Question 3

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 2 | 5 | 2 | 59 | 57 |

The valid response rate for this question was 100%.

Figure 26: : "I felt more comfortable in the out-of-doors after my visit."



Even though there was a split between those who had spent time in the countryside and those who had not, 92.8% of these people felt

more comfortable in the out-of-doors after their visit. Clearly, the Boyne River School experience helped students gain an increased comfort level with the out-of-doors activities. There were still 5.6% of the respondents that indicated that the program had not increased their comfort level.

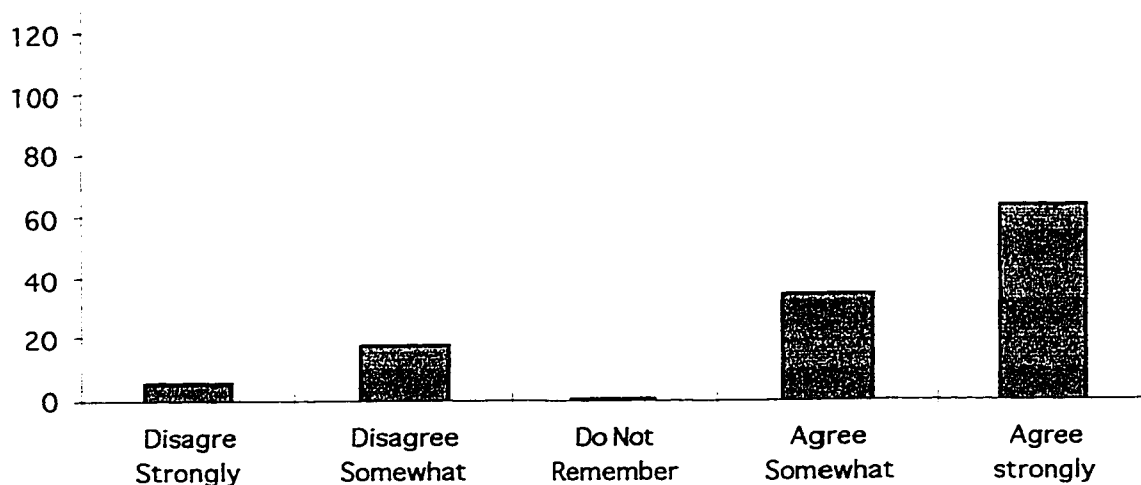
Question 24: “Art, English, Math and Music should be part of Outdoor Education.” The results of this question are shown in Table 26 and Figure 27.

Table 26: Responses to Question 24

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 6 | 18 | 1 | 35 | 63 |

The valid response rate for question 21 was 98.4% with 2 none responses.

Figure 27: Art, English, Math and Music should be part of Outdoor Education.”



Did the people who responded to this survey realize that many of the activities they took part in included traditional classroom

subjects? Of those responding, 79.67% agreed. Many people were aware that the activities they took part in included other subjects. Some of these people also attended special programs such as “Music at the Boyne” which made seeing the connection easy.

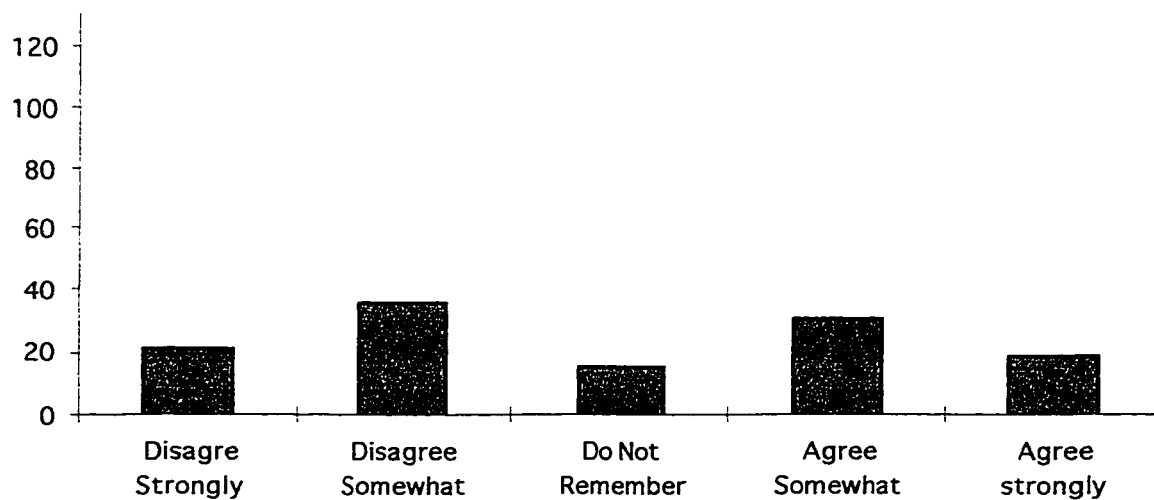
Question 21: “I did many things by myself at the Boyne.” The responses to this question are shown in Table 27 and Figure 28.

Table 27: Responses to Question 21

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 22 | 36 | 15 | 31 | 19 |

The valid response rate for this question was 98.4% with 2 none responses..

Figure 28: “I did many things by myself at the Boyne.”



To Question 21, 40.65% felt they had done things by themselves but 47.15% felt they had not and 12.20% could not remember.

Question 21 was put in to see how accurate were the respondents' memories. This question is open to some interpretation of what constitutes doing things by yourself. In the evening the students get to choose an activity to do such as a quiet activity like reading a book. This could be interpreted as doing something by themselves. Also in the evening classes journal writing takes place. This also could be taken as doing things by themselves. Similarly outside in the day the students might have been involved in a solo sit, where they sit in the woods by themselves and listen to the sounds around them. They might also have been on the ropes course where they might have considered that it was an activity they did themselves or perhaps skiing.

This question was included as a check because at the Centre, we feel that the students are occupied with group activities most of the time, so there is not much time for students to do things by themselves. Obviously this question did not work out as planned.

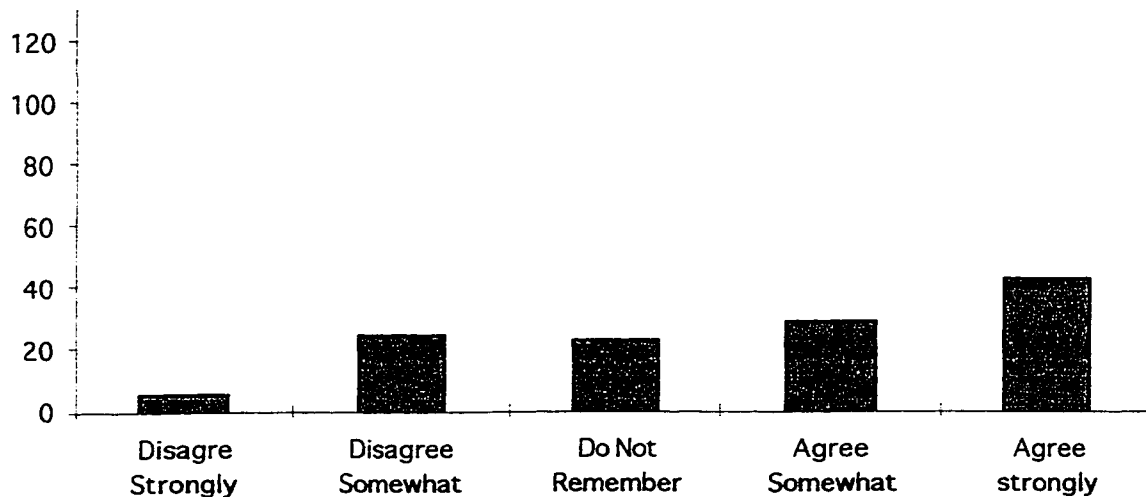
Question 7 was also meant to check on the respondents' memory. "We played a lot of sports at the Boyne. eg. basketball"

Table 28: Responses to Question 7

| Disagree Strongly | Disagree Somewhat | Do Not Remember | Agree Somewhat | Agree Strongly |
|-------------------|-------------------|-----------------|----------------|----------------|
| 6 | 24 | 23 | 29 | 43 |

The valid response rate for this question was 100%.

Figure 29: “We played a lot of sports at the Boyne. eg. basketball”



This was a poorly chosen question and as a result has little value in the survey.

Twenty-four percent felt they had not played many sports, while 57.6% felt they had and 18.4% could not remember. In the regular program we do not play sports such as basketball, however at lunch time and in the evening recreation time sports are played. Also some people might feel that such things as rock climbing, skiing and archery might be considered a sport, and many of these students would have taken part in these activities. This was the case in a number of the surveys where respondents wrote in such things as snow shoeing and skiing beside this question as an explanation.

Things Best Remembered

Question 25 was an open ended question where the former students had the opportunity to tell what they remembered best about the

Boyne. I anticipated, the way the question was worded, that they would give one thing, as some did, but most gave a list of things they liked best. As a result this question had 246 responses which are grouped into 90 categories. These responses are interesting because this question gives the respondent the opportunity to express their feelings as to what they enjoyed without the constraints the other questions put on them. Table 29 lists the categories with 6 or more responses. The total list can be found in Appendix C.

Table 29: Breakdown of question 25

| | |
|---|----|
| Friendships | 18 |
| Teachers | 17 |
| Hikes | 17 |
| Activities would not have a chance to do | 13 |
| Skiing | 11 |
| Group challenges | 11 |
| Night Hike | 11 |
| Being outdoors | 8 |
| Having Fun | 7 |
| Social Atmosphere | 6 |
| Dorm Life | 6 |
| Ropes Course | 6 |
| Interacting and learning about other students | 6 |

Table 29 brings out many of the things that made the greatest impressions on the respondents. What are the type of things that

impressed these people? Many of these activities revolved around the social aspects of the residential experience with 90% of the respondents indicating they enjoyed their time in the dorm in question 17. Although this aspect of the program is not planned into the program the way the academic topics are, it is still a strong component of the residential program. This is perhaps why the residential 5 day program has a greater impact on students than the 1 day program as has been noted elsewhere in this paper.

Activities that were new to the student, or that they would not have an opportunity to do also placed high on the list. Things like hikes or skiing that could become lifetime skills.

Most things that impressed them were different from their normal activities.

There were very few negative responses given to this question. One had to deal with the food with 2 respondents listing the food as bad, on the other hand 4 respondents listed the food as good. There were 2 different cooks in the time frame of the study which may have had something to do with these comments . On the other hand it may have been as a result of personal preferences on the menu that was served the week of the respondent's visit.

The other responses that could be classified as negative had to do with being sent home early and breaking a window. The negative aspect of these responses as far as the respondents were concerned was the fact that they did not get to stay for the whole week as the other students from their class did.

Comments from the final page of the survey

The final page of the survey allowed the respondents to add any other comments that they wanted. This section showed some very illuminating responses. There were a lot of general comments like:

"I hope students of future generations can experience the same learning adventure as I did."

"Boyne River gave me an invaluable experience to learn about nature and bond with my classmates. I have often reflected on what a tremendous time I had here."

"The Boyne is a state of mind more than anything else, It exposed me to many things that go beyond a regular classroom. Every student goes away from their visit with something unique which they will remember for years to come."

"I don't remember the social aspect as much as the learning by doing that turned me on to learning for the first time."

There were also a number of comments that showed the Boyne River School had a great deal of impact on the student.

"I think my visit to Boyne River will always hold a special place in my mind as well as my heart. It was one of the best times I

remember as a child. To share these memories with my daughter has been great. Words can't express my feelings about my experience.

When my daughter got into the van after her visit to Boyne River the smell of her hair and clothes made me feel happy for her, that she got to experience something so beautiful and it made me a little jealous."

"It is my opinion that the Boyne River Science School represents the single most important program provided by the Toronto Board of Education.

In particular, children from the inner city and low income families are exposed to real, tangible experiences that promote a love and respect for Canada's natural legacy. It is a facility of immeasurable value."

Another person said:

"Children are receiving less direct exposure to the outdoors. Without programs like those at 'the Boyne', most children will never set foot outside of the city. For one to feel a connection with nature, he must first feel confident to move within it and explore it."

"The school provided me the opportunity to rediscover the beauty of the outdoors. I was born and raised in the rural area of Jamaica. I left at the tender age of eight, and found myself in the big city of Toronto. It wasn't until I visited the Boyne River that I realized how much I miss the quietness of the countryside, and the beauty of the

stars at night. The fresh air, long walks gave me the opportunity to think about my homeland.

Although I was sent home early on one occasion, I truly believe that being at the Boyne helped me sort out some issues that were causing me to get myself into trouble.”

“My trips to the Boyne, to the Island School and camping are my strongest and best memories of public school, the very best being of the Boyne River. At the time, I was a recent immigrant and my parents were unable to take me and my sisters on basically any outings and specifically to outings outside Toronto. These trips were my only opportunity to be in a natural environment, which, on being there, I realized was something that I enjoyed immensely.”

“The Boyne made a huge impact on my childhood. It has continued to do so in my professional life.”

Were there any negative comments? One person commented “The food wasn’t the best as I recall.”

Another person responded “I want you to know that 2 times I attended the school produced 2 totally different experiences. When I attended in Grade 6, it was in the Winter term. I didn’t have a good time at all ...especially since I was FORCED to go downhill skiing. I kept losing one ski halfway down the hill. This was extremely frustrating since I had never skied before and the “student” teacher kept yelling at me. All I wanted to do was go home.

The second time was in Grade 8 and I had a fantastic time. I had decided after the Grade 6 trip that if it was winter session I wasn't going for sure but luckily it was the fall session. The leaves were changing colour and the activities were a lot more fun."

These comments show that the Boyne River School had a tremendous impact on these people that they have remembered over many years. Looking at the last quote, it is obvious that the staff of the school must be very careful in dealing with students or we might just as easily impact students in a negative manner. Fortunately the boards policy of trying to give students more than one visit was very beneficial in this case.

Comparing Results by Gender

Are there any noticeable differences in the response rates if they are separated out by gender? For this question a statistical analysis was run on 3 questions that appeared to have a significant difference when the percentage differences in responses between genders were observed. The rest of the questions had response rates that were very similar and so were not tested. The 3 responses, questions number 2, 5 and 9 were tested using a .05 significance level with the chi-square test for association. This statistical analysis showed that there was no significant difference between the male and female respondents on any questions. For there to be a significant difference with one degree of freedom and a

.05 significance level chi-squared would have to be greater than 3.841. (Chalmers and Parker 1989)

The breakdown by gender and response for Question 2 “After my visit I became more interested in wildlife.” is shown in Table 30.

Table 30: Responses by Gender to Question 2

| | Positive Responses | Negative Responses | Total |
|--------|--------------------|--------------------|-------|
| Male | 50 | 8 | 58 |
| Female | 59 | 4 | 63 |
| Total | 109 | 12 | 121 |

For this question there were 2 “do not remember” responses and 2 people who did not give a response accounting for all 125 respondents. Doing a chi-squared test of association on these numbers gave a result of 1.8, considerably below the 3.841 required if there were to be a significant difference.

The breakdown by gender and response for Question 5 “I felt more self-confident about solving problems.” is given in Table 31.

Table 31: Responses by Gender to Question 5

| | Positive Responses | Negative Responses | Total |
|--------|--------------------|--------------------|-------|
| Male | 49 | 6 | 55 |
| Female | 47 | 10 | 57 |
| Total | 96 | 16 | 112 |

For this question there were 13 “do not remember” responses accounting for all 125 respondents. Using these figures the chi-squared value is 1.05, once again indicating no significant difference in these two groups for this question.

Question 9: “I made a lifestyle change. eg. recycled, conserved water etc.” was the last question where there appeared to be a possibility of significant difference between the genders. Table 32 shows the breakdown for this question by gender and response.

Table 32: Responses by Gender to Question 9

| | Positive Response | Negative Response | Total |
|--------|-------------------|-------------------|-------|
| Male | 38 | 16 | 54 |
| Female | 45 | 11 | 56 |
| Total | 83 | 27 | 110 |

For this question there were 13 “do not remember” responses and 2 people who did not respond to this question accounting for all 125 respondents. The chi-squared result for this question was 1.431, once again indicating that there was no significant difference between male and female responses for this question.

Previous Experience

The chi-square test for association was done on 9 responses of those people who had visited the countryside a lot before their visit to the Boyne River School and those who did not have the opportunity. These questions were chosen as there was a large percentage difference in the responses of these 2 groups in these questions. There turned out to be a significant difference in the responses to 7 of these questions using this analysis. The 9 questions tested were # 2,3,4,6,8,9,10,16 and 24. Questions # 4 and 16 ended up having no significant difference.

Table 33 shows the breakdown of responses for question 4 by visits to the countryside. Question 4 read: “I gained more respect for living things.”

Table 33: Responses to Question 4

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 77 | 2 | 79 |
| Did not Visit | 40 | 4 | 45 |
| Total | 117 | 6 | 123 |

For this question there was 1 person that did not reply and 1 that gave a “do not remember” response. As a result of the calculations the chi-square frequency for this question turned out to be 2.95 below the 3.841 figure that would have indicated a significant difference.

Table 34 shows the breakdown of responses for Question 16. Question 16 read: “My visit to the Boyne helped me towards achieving my ‘personal best’ in many activities. eg. school, sports, job.”

Table 34: Responses to Question 16

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 62 | 12 | 74 |
| Did not Visit | 30 | 13 | 43 |
| Total | 92 | 25 | 117 |

For this question there were 2 people who did not respond and 6 who responded that they did not remember. The chi-squared result for this question was 2.71 indicating that there was no significant difference in the responses of the two groups for this question.

Table 35 shows the breakdown of the responses for Question 2 by visits to the countryside. Question 2 read: “After my visit I became more interested in wildlife.”

Table 35: Responses to Question 2

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 76 | 3 | 79 |
| Did not Visit | 33 | 9 | 42 |
| Total | 109 | 12 | 121 |

For this question there were 2 people who did not respond and 2 people who responded with “do not remember”. The chi-squared result for this question was 9.87 which indicates that there was a significant difference in the answers from these two groups for this question.

The people who had the opportunity to visit the countryside a lot showed a significant higher level of interest in wildlife as a result of their visit to the Boyne River School.

Table 36 shows the breakdown of responses to Question 3 by visits to the countryside. Question 3 read: “I felt more comfortable in the out-of-doors after my visit.”

Table 36: Responses to Question 3

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 77 | 1 | 78 |
| Did not Visit | 39 | 6 | 45 |
| Total | 116 | 7 | 123 |

There were 2 people who responded with a “do not remember” to this question. The chi-squared result for this question was 7.55 indicating a significant difference in the responses of these two groups for this question.

The people who had visited the countryside a lot also showed a higher level of comfort in the out-of-doors.

Table 37 gives the breakdown of responses to Question 6 by visits to the countryside. Question 6 read: “I participated in a new outdoor activity that I learned at the centre. eg. skiing, rock climbing, bird watching.”

Table 37: Responses to Question 6

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 76 | 2 | 78 |
| Did Not Visit | 39 | 6 | 45 |
| | 115 | 8 | 123 |

There were 2 people who responded with “do not remember” to this question. The chi-square result for this question was 5.55 indicating that there was a significant difference in the responses of the two groups to this question.

The people who had visited the countryside a lot were also more inclined to try a sport they had been introduced to at the Boyne River School.

Table 38 gives the breakdown of the responses to Question 8 by visits to the countryside. Question 8 read: “I like going on nature hikes.”

Table 38: Responses to Question 8

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 77 | 1 | 78 |
| Did not Visit | 40 | 5 | 45 |
| total | 117 | 6 | 123 |

There were 2 people who responded “do not remember” to this question. The chi-squared result for this question was 18.29 indicating a significant difference in the responses of these 2 groups to this question.

The experienced people were significantly more inclined to go on nature hikes as a result of their Boyne visit.

Table 39 gives the breakdown of the responses to Question 9 by visits to the countryside. Question 9 read: “I made a lifestyle change. eg. recycled, conserved water etc.”

Table 39: Responses to Question 9

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 59 | 13 | 72 |
| Did not Visit | 24 | 14 | 38 |
| Total | 83 | 27 | 110 |

To this question there were 2 people who gave no response and 13 people who responded with “do not remember”. The chi-squared results for this question was 6.02 indicating a significant difference in the results of the two groups for this question.

The people who had the opportunity to visit the countryside a lot were more likely to make a lifestyle change.

Table 40 gives the breakdown of the responses to Question 10 by visits to the countryside. Question 10 read: “I learned that I can make a positive difference to the environment because of my visit.”

Table 40: Responses to Question 10

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 68 | 7 | 75 |
| Did not Visit | 32 | 9 | 41 |
| Total | 100 | 16 | 116 |

There were 9 people who responded with “do not remember” to this question. The chi-square result for this question was 3.94 indicating that there was a significant difference in the responses of the two groups to this question.

The people who had the experience of visiting the countryside were more likely to learn they could make a positive difference to the environment.

Table 41 gives the breakdown of responses to Question 24 using visits to the countryside. Question 24 read: “Art, English, Math and Music should be part of Outdoor Education.”

Table 41: Responses to Question 24

| | Positive Responses | Negative Responses | Total |
|---------------------|--------------------|--------------------|-------|
| Visited Countryside | 67 | 11 | 80 |
| Did not Visit | 31 | 13 | 42 |
| Total | 98 | 24 | 122 |

There were 2 people who did not respond to this question and 1 person who responded with “do not remember”. The chi-square result for this question was 4.83 meaning the responses to this

question show significant differences in the responses of the two groups to this question.

In question 2, which related to the environment, there were 38.72% more of the people who visited the countryside a lot before their visit, were more interested in wildlife as a result of their visit. In question 9, 42.16% more of these same people made a lifestyle change, in question 10, 36% more learned they could make a positive difference to the environment. From these results it would appear that people with more experience in the countryside were in a better position to get more out of the lessons at the centre because they had a better background on which to build and felt more comfortable in the outdoor environment. This would lead one to argue that students should have more opportunities to visit outdoor centres especially if they do not get an opportunity due to their financial situation or other reasons to visit the countryside.

Of the people that had indicated they had visited the countryside a lot before their visit as opposed to those who had not responded in this manner, they were 31.62% more likely to like going on nature hikes, 32.18% more likely to participated in a new activity they had learned and 22.76% of these people felt more comfortable in the outdoors as a result of their visit..

Did the people who had visited the countryside a lot before their visit feel that many other subjects should be part of outdoor education? Their response rate to this question was 36.74% higher than those who had not visited the countryside a lot before their visit.

Was there a significant difference by gender in the people who had a chance to visit the countryside a lot before their visit to the Boyne River School? As was stated earlier, the statistical analysis indicated that there was no significant difference by gender in any of the questions.

Chapter 6

Summary and Conclusions

In this chapter, the author looks at how the responses fit with the school and pupil goals set by the Toronto Board of Education for the Boyne River School. Do these results show that the stated mission of the Boyne River School is being accomplished? Because of the very positive nature of these results, it will be necessary to look at some of the possible reasons why people felt this way. One final issue that requires looking at is how representative is this sample.

How responses fit with the goals

How do these responses fit in with the goals for students and the goals for the Boyne program? In question 18, 93.6% responded that they learned more by the hands-on aspect, showing that student goal 1: *to learn by direct experience*, was being met in the survey time period.

Sports or outdoor pursuits were mentioned 43 times in question 25 and in question 6, 92.0% indicated they had participated in a new sport as a result of their visit. This shows that student

goal 2: *To discover through individual and group experience the value of outdoor pursuits*, was met.

Student goal 3: *To develop and improve skills that enable one to enter the natural environment with care, confidence and sensibility* can be shown by a number of questions. Question 4 revealed 94.31% gaining respect for living things. In question 9, 67.48% made a lifestyle change that would benefit the environment. In question 11, 71.77% indicated they considered the environmental impact of their actions as a result of their visit to the Boyne.

Student goal 4: *To learn about the environment and that environmental issues are complex and important*. This goal is supported by question 2, "After my visit I became more interested in wildlife", with 88.62% giving a positive response. Question 10 had an 80.0% positive response to making a positive difference to the environment.

Student goal 5: *To develop a sense of history about the land and the people that have inhabited it*. There was no question directly related to this goal. In question 25 farm visit was mentioned by 1 person as was town study. This is the only indication that this goal was met at all. We would have to conclude from this that goal 5 was not met very well.

Student goal 6: *To learn to work and live together cooperatively*. This goal was covered by question 15 to which 91.13% replied that they had learned to work cooperatively. As can be seen, the goals for the students were definitely met.

What about the program goals? Program goal 1: *We believe in the "primacy of experience" that people learn best by doing*.

Primacy of the experience was covered in question 18 learning by hands-on experience as seen previously with a 93.6% positive response and the very specific things the students remembered.

Program goal 2: *We believe it is important to encourage everyone to achieve their “personal best” and to leave feeling their time here has been special.* This goal was covered by question 16, where 74.80% indicated their visit had helped them towards achieving their personal best.

Program goal 3: *We work at building self-confidence in students in every activity.* This goal was covered by question 5, with 76.8% indicating they had gained self-confidence.

Program goal 4: *We are here to help provide future adults with the ability to understand and positively affect the environment.* This goal was covered by a number of questions such as 2, 4, 9 and 11. The positive responses in these questions ranged from 67.48% to 94.31%.

Program goal 5: *We believe we have a duty to respond to current environmental issues creatively and responsibly.* This goal is covered in question 9, where 67.48% indicated they made a lifestyle change as a result of their visit and question 10 where 80% indicated they learned they can make a positive difference to the environment.

Program goal 6: *We believe our program must make a meaningful contribution to the curriculum developed by the homeroom teachers.* This goal is not measured in this survey. At the school we try to cover this goal by developing the program individually with each teacher for their class ahead of the visit.

Program goal 7: *We believe we must continually evaluate our program and respond thoughtfully to the results.* This goal is met by discussions with the home room teacher and the students at the end of each program. As well the Jones (1993) study and this study are another example of this on-going evaluation.

The mission statement of the Boyne River School is *“To help people realize their kinship to the planet earth and to live responsibly upon it”*. Has this been accomplished? If we look at the responses to questions 4, 9, 10 and 11 the answer is a “yes”. In question 4, 92.8% of the respondents said they had more respect for living things. In question 9, 66.4% made a lifestyle change that would benefit the environment. In question 10, 80.0% indicated that they learned that they could make a positive difference to the environment and in question 11, 71.2% indicated they considered the environmental impact of their actions because of their visit to the Boyne River School.

Comparing Three Recent Studies

There are three recent studies done in the last 5 years, including this one, whose results can be compared as they all have been done in the same format. These include the study by Douglas Jones in 1993, one by Alisha Townsend in 1996 and the current study. The one difference that will have some effect on this comparison is the fact that the Townsend study looked at day centres while the Jones and Cumming studies looked at the Boyne River School which is a residential centre.

The number of participants in each study varied, Table 42 shows the numbers in each study.

Table 42: Number of Participants in Each Study

| Study | Jones 1993 | Townsend 1996 | Cumming 1998 |
|------------------------|------------|---------------|--------------|
| Number of participants | 289 | 571 | 125 |

The Townsend study had the greatest number of participants in the study, with present students from grade 8 and grade 12 classes. The Jones study had 289 participants who had attended over the 5 years before the study. They were surveyed from present grade 7 through 13 classes. The Cumming study had 125 participants, in contrast to the other 2 studies none of whom are now in the school system and ranged from grade 4 through 13 in the years 1973 to 1986. This allowed for the survey to be self administered as these people are now all adults. However as a result these former students had to be located individually from all over the Province of Ontario and with one result coming from British Columbia.

The majority of the respondents had attended the centres once or twice in all three studies. A few in all studies had attended three or more times.

The number of schools in each study also varied, Table 43 shows the number of schools in each study.

Table 43: Number of Schools Represented

| Study | Jones | Townsend | Cumming |
|-------------------------------|-------|----------|---------|
| Number of Schools Represented | 6 | 7 | 73 |

The Jones study represented students from 6 different schools. The Townsend study represented students from 7 different schools and the Cumming study represented students from 73 different schools. The large number of schools (73) in the Cumming study gives a much broader view of the educational impact of the Boyne River School program.

There is a large difference in the breakdown of elementary and secondary students as shown in Table 44.

Table 44: Breakdown of Elementary Students and High School Students

| Study | Jones | Townsend | Cumming |
|---------------------|-------------|------------|---------------|
| Elementary Students | 145 or 50 % | 407 or 71% | 133 or 85.81% |
| Secondary Students | 144 or 50% | 163 or 29% | 22 or 14.19% |

The Jones study represented an equal number of elementary and secondary students. The Townsend study represented 71% elementary students and 29% secondary students, while the Cumming study represented 85.81% elementary students and 14.19% secondary students. The reason for the differences in the numbers in the studies is because of the way the surveys were conducted. The numbers in the Cumming study somewhat reflects the break down

the Boyne River School put on the selection of elementary and secondary students chosen to attend. These respondents were searched out from all over and were not in a particular grade but instead indicated the grades in which they had attended the Boyne River School. The other 2 studies selected the grades they used in the study.

Each study also looked at the gender break down of the respondents, this is shown in Table 45.

Table 45: Gender Breakdown

| Study | Jones | Townsend | Cumming |
|--------|------------|--------------|-----------|
| Male | 151 or 52% | 283 or 50.2% | 60 or 48% |
| Female | 138 or 48% | 281 or 49.8% | 65 or 52% |

The respondents in all three studies were fairly equally divided between male and female, so that there should be little if any gender bias in these studies.

The survey in the Jones and Townsend studies were administered by the researcher. The Cumming survey was self administered.

The number of questions in each study varied as shown in Table 46.

Table 46: Number of Questions in Survey

| Survey | Jones | Townsend | Cumming |
|---------------------|-------|----------|---------|
| Number of Questions | 66 | 37 | 29 |

The Jones survey was the longest at 66 questions, and he indicated possible problems with the survey because of its length. Townsend found that her study at 37 questions was too long. Being a self administered study the Cumming study was kept to 29. The longer studies have the advantage of being able to cover more material but sometimes at the expense of quality.

Although most of the questions in all three studies were different, there were some similarities that can be compared. The concepts asked in some of the questions were almost identical, and some questions were identical.

All the studies asked a question in one manner or another to see if the respondents had fun at the centres. In the Townsend study the question read: "I had lots of fun in the outdoors during my visit to the centre." In the Jones study students were asked to respond to the statement: "My Boyne visit is fun." The Cumming study stated: "I had fun at the Boyne." The results to this question are given in Table 47.

Table 47: Responses to having fun at the centres

| Study | Jones | Townsend | Cumming |
|-------------------------------|-------|----------|---------|
| Percent of Positive Responses | 81.6 | 85 | 99.2 |

All of the studies showed a high percentage of respondents had fun at the centres. The results in the Townsend study may have been affected by the fact that these centres were day centres and bad weather on the day of the visit could affect the respondents' perception of the enjoyment they had for that day. The 99% positive

response in the Cumming study is very high indeed. This for people looking back over as much as 25 years, obviously there was a very great impact by their visits to the Boyne River School to get this kind of positive response rate. This enjoyment is also a strong motivator for preserving nature as stated in Szagun and Mesenholl (1993). Also self reinforcement likely occurred to create these positive feelings over the long term on which these people are reflecting back.

Each of the three studies looked at the *hands-on* aspect of the programs. Did the respondents feel it was beneficial? Table 48 shows the results in each study.

Table 48: Hands-on Aspect of the Program

| Study | Jones | Townsend | Cumming |
|-------------------------------|-------|----------|---------|
| Percent of Positive Responses | 78.5 | 75 | 93.6 |

All three studies had high positive responses to the hands-on aspects of the programs. Obviously this method of study at the centres impacted on the respondents, with the people in the Cumming study remembering this aspect of the program the most.

Each of the studies looked at the aspect of increased self-confidence as a result of a visit to one of the centres. The results of this increase are shown in Table 49.

Table 49: Increase in Self-Confidence

| Study | Jones | Townsend | Cumming |
|----------------------------------|-------|----------|---------|
| Percentage of positive responses | 69.1 | 41 | 76.8 |

The length of program would appear to have had some effect on the number of respondents whose self-confidence increased. The longer residential program appears to have had a greater effect on the self-confidence levels of the respondents than the day programs in the Townsend study, as one would expect.

What about respect for nature? Did a visit to a centre increase the respondents respect for nature? The results to this question can be seen in Table 50.

Table 50: Respect for Nature

| Study | Jones | Townsend | Cumming |
|-------------------------------|-------|----------|---------|
| Percent of Positive Responses | 68.4 | 80 | 94.3 |

In response to this question, both the residential program and the day program seemed to have an equally strong impact on the respondents. In both the residential and day programs the respondents gained significantly in their respect for nature. In the Jones study the lower results may have been the result of the students he surveyed. Many of the high school students he surveyed came from an enrichment group who may already have developed a high respect for nature as a result of their enrichment classes or because of the very specific nature of their programs and as a result did not feel they had gained the respect as a result of the Boyne River Program.

Do the students learn new skills at the centres? The responses to this question are shown in Table 51.

Table 51: Learn New Skills

| Study | Jones | Townsend | Cumming |
|-------------------------------|-------|----------|---------|
| Percent of Positive Responses | 62.8 | 75 | 91.9 |

The respondents indicated they learned new skills both at the residential centres and at the day centres. This shows that both types of centres are a valuable tool in teaching new skills.

One question that was asked on the Townsend study and the Cumming study was whether a visit to an outdoor education centre during school time was worthwhile? The Townsend study got a 92% positive response rate to this question, a very high support rate for this type of program from students still in the school system. The Cumming study had a 99% positive response rate from people who had completed the public and secondary education and were now the people funding these programs through their tax bills. These people obviously felt this was money well spent.

Reason for Such Positive Results

Why have the results of these surveys been so positive? Many of the students who attend these centres are receiving a unique experience at a critical point in their school lives. For the 36% of the students in the Cumming study who did not have much opportunity to visit the countryside, it was an opportunity that they did not get very often, the chance to spend time in the natural environment.

Even the one student who stated they had not had fun at the Boyne wrote in an explanation that they had been to the Boyne twice. The first visit was in the winter and one of the activities they had done was cross country skiing which this person did not enjoy. This person had returned in another grade in warm weather with different activities and this time had enjoyed it!

How representative is the Boyne River School sample?

Although it would have been beneficial to have a larger number of returns, this sample is likely reasonably representative of the 60,000 students that attended the school from 1973 to 1986. This sample contains returns from all the grade levels that attended during the time period. This included one from a student that attended in grade 4, that was not a grade to officially get the chance to attend the school, although this occasionally happened because of a split grade 4-5 class. The sample also includes students from all the years that the survey covered. There are also returns from 73 schools or over half of the 128 schools that attended the Boyne River School during the time period of the study.

The study also has a fairly equal representation of male and female respondents, 65 female and 60 male.

The results in the Cumming study are more positive than the other two surveys to which it is compared. Is this the result of self selection or is it the result of the longer duration of the program? Or has the length of time since the visits enhanced the positive aspects of the visit? These are difficult questions to answer.

There is also the retrospective factor and the age factor of the people responding to take into consideration. Every effort was made to get responses from all people that could be found. Perhaps some people did not bother to respond even though they heard about the survey. To try to overcome this, the author is continuing to search out more respondents.

Future Studies

It would be valuable if all outdoor centres evaluated their programs both to see their impact and to improve their programs. This would also make it easier to see where the strengths of the various programs lie, allowing programs best taught in day centres to be recognized as well as those best done in residential centres.

How might it be possible to get a higher response rate to a survey of this nature looking at students so far back in time? Student lists might have helped, but these people would probably have moved so this probably would not have helped much. Money to advertise might also have helped some but again people are not too inclined to answer surveys.

Following a group of students through the years would probably be the best alternative.

Meaning of results to Boyne River School

These results point out that The Boyne River School has had a very strong impact on the people who responded to the survey.

Although many of the results were very positive there are a few areas that must be looked at to make the program as beneficial as possible to the student the school serves. The fact that students who have the opportunity to visit the countryside a lot showed a significant difference in their responses to a number of questions would indicate that we should be looking at ways to give the other 36% of the students the same sort of opportunity. We will have to look at the possible ways that this can be achieved. This might include more visits to outdoor centres. It could mean increased opportunities through day centres or encouraging classroom teachers to do more field trips if only to the local park to do lessons on the environment.

Another point that must be addressed is the evaluation of the Boyne River School program. In 25 years of operation this is only the second time the program has been looked at in depth. A regular in depth evaluation procedure should be put in place to evaluate the effect of the program, perhaps every 5 years. This should not take away from regular evaluation on a weekly basis as is done now. This weekly evaluation could however possibly be more formalized with a standard evaluation form that could be kept on file to be used in the 5 year evaluation.

Impact

As can be seen from the responses in this survey the Boyne River School has definitely had a very positive impact on the people that filled out this survey.

For these people a foundation was built providing background attitudes, skills and knowledge that allowed them to develop a responsible lifestyle.

The results of this study and the other studies show that outdoor education has played a significant role in the lives of thousands of young people. It does seem worth investing in and society benefits greatly from these programs. The students themselves also benefit with increased confidence in their own ability that can be applied to many situations in their lives. Many skills and activities are introduced that are used through life by many of the people who attend outdoor centres.

Conclusions

Visits to outdoor education centres help to build a foundation for students to develop attitudes, skills and knowledge that allow them to live responsibly on the earth.

The more opportunities students have to visit the countryside, the greater the impact the outdoor program has on them.

Appendix A

The Survey

January 6, 1997
Boyne River Natural Science School
R.R.4, Shelburne, Ontario
LON 1S8

Greetings:

The Boyne River School is conducting a survey to see the effect the school has had over the years. If you attended the school either in elementary or high school between the years 1973 and 1986 we need your help! In these times of increased program accountability it is necessary to evaluate all school programs to improve them. This is your opportunity to contribute to the Boyne River School program if you are willing. Participation in this survey is entirely voluntary. No responses will be attributed to any individual and the identity of respondents will be kept confidential. You can request a copy of the results from the Boyne River School by late 1997 if you so desire.

Enclosed you will find a short survey that will take about five minutes to fill out. Your support in filling out this survey is greatly appreciated. Please answer all the questions. If you have any friends that attended the school or know of anyone who attended the school during the above time period, please contact them to get a survey to fill out or feel free to make copies of this survey. The more people we can get to fill in the survey the more meaningful will be the results and thus that much more useful in evaluating our program.

Surveys can be taken to the office of any Toronto Board of Education School and ask them to send it in the Board mail to the Boyne River School, no postage necessary.

If you require more information or want more surveys call the Boyne River Natural Science School at (905) 857-4160 or the staff contact R. Cumming (519) 925-3079,
Email rcumming@headwaters.com

Thank you for your help.

The Boyne River School

Boyne River Natural Science School

Survey



The Boyne River School is attempting to find out what impact the school has had on students over the years. This survey will be used to better understand how the students have viewed the program and to improve it if necessary. Participation in this survey is entirely voluntary and responses will not be attributed to any individual. If you agree to participate, please answer all of the questions. If you wish to comment on any questions, please feel free to use the space in the margins. Your comments will be read and taken into account. It is anticipated that the report will be ready by late 1997. If you wish a copy please contact the school.

Thank you for your help.

Boyne River Natural Science School,
R.R. # 4, Shelburne, Ontario,
LON 1S8,
(905) 857-4160
School contact
R. Cumming
(519) 925-3079
EMail rcumming@headwaters.com

Boyne River Natural Science School Survey

Please circle the answer for each of the following questions.

1) I visited the Boyne River School in (circle all appropriate dates):

If not certain, circle your best guess.

1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982,
1983, 1984, 1985, 1986

2) When I visited the school I was in grade: circle all appropriate answers. If you attended more than once in any grade, circle how many times. eg. (A) 5 attended in grade 5 twice.

1, 2, 3

(A) 5 (B) 6 (C) 7 (D) 8 (E) 9 (F) 10 (G) 11 (H) 12

1,2,3 1,2,3 1,2,3 1,2,3 1,2,3 1,2,3 1,2,3 1,2,3

(I) 13 (J) Do not remember

1,2,3

3) What home school(s) did you attend when you visited the Boyne River School. 1) _____ 2) _____

3) _____

4) I am: (A) Female (B) Male

From your recollections of your visit to the Boyne River Natural Science

School answer the following questions:

| | Disagree strongly 1 | Disagree somewhat 2 | Agree somewhat 3 | Agree strongly 4 | Do not remember 9 |
|--|---------------------------|---------------------------|------------------------|------------------------|-------------------------|
| 1) I talked about my visit to the Boyne with my friends many times after the visit. | | | | | |
| 2) After my visit I became more interested in wildlife. | 1 | 2 | 3 | 4 | 9 |
| 3) I felt more comfortable in the out-of-doors after my visit. | 1 | 2 | 3 | 4 | 9 |
| 4) I gained more respect for living things. | 1 | 2 | 3 | 4 | 9 |
| 5) I felt more self-confident about solving problems. | 1 | 2 | 3 | 4 | 9 |
| 6) I participated in a new outdoor activity that I learned at the centre. eg. skiing, rock climbing bird watching. | 1 | 2 | 3 | 4 | 9 |
| 7) We played a lot of sports at the Boyne. eg basketball | 1 | 2 | 3 | 4 | 9 |
| 8) I like going on nature hikes. | 1 | 2 | 3 | 4 | 9 |
| 9) I made a lifestyle change. eg. recycled, conserved water etc. | 1 | 2 | 3 | 4 | 9 |
| 10) I learned that I can make a positive difference to the environment because of my visit. | 1 | 2 | 3 | 4 | 9 |
| 11) I consider the environmental impact of my actions due to my Boyne visit. | 1 | 2 | 3 | 4 | 9 |

| Disagree | Disagree | Agree strongly | Agree somewhat | Do not somewhat | strongly | remember |
|--|----------|-------------------|-------------------|--------------------|----------|----------|
| 12) I learned a new skill at the Boyne. | | 1 | 2 | 3 | 4 | 9 |
| 13) I have positive memories about my visit to the Boyne. | | 1 | 2 | 3 | 4 | 9 |
| 14) I remember some of the other students I met at the Boyne. | | 1 | 2 | 3 | 4 | 9 |
| 15) I learned to work co-operatively and live with others. | | 1 | 2 | 3 | 4 | 9 |
| 16) My visit to the Boyne helped me towards achieving my 'personal best' in many activities. eg. school, sports, job. | | 1 | 2 | 3 | 4 | 9 |
| 17) I enjoyed my time in the dorms at the Boyne. | | 1 | 2 | 3 | 4 | 9 |
| 18) I learned more in the hands on aspects of the Boyne program than I did in the classroom work. | | 1 | 2 | 3 | 4 | 9 |
| 19) I had fun at the Boyne. | | 1 | 2 | 3 | 4 | 9 |
| 20) I liked working in a small group. | | 1 | 2 | 3 | 4 | 9 |
| 21) I did many things by myself at the Boyne. | | 1 | 2 | 3 | 4 | 9 |
| 22) I visited the countryside a lot before my visit to the Boyne. | | 1 | 2 | 3 | 4 | 9 |

| Disagree | Disagree | Agree strongly | Agree somewhat | Do not somewhat | strongly | remember |
|--|----------|-------------------|-------------------|--------------------|----------|----------|
| 23) A visit to an outdoor education centre during school time is a worthwhile educational experience. | | 1 | 2 | 3 | 4 | 9 |
| 24) Art, English, Math and Music should be part of Outdoor Education. | | 1 | 2 | 3 | 4 | 9 |
| 25) The thing I remember best about the Boyne is: | | | | | | |

If there are any other comments you would like to make about the school, please use this space for that purpose.

Your contribution to this effort is greatly appreciated.

Appendix B

List of Schools with respondents

Toronto Board of Education Elementary Schools:

Numbers correspond to numbers on map figure 1, pp. 42

1. Adam Beck P.S.
3. Allenby P.S.
6. Annette P.S.
7. Balmy Beach P.S.
9. Bedford Park P.S.
11. Blake P.S.
13. Blythwood P.S.
14. Bowmore Rd. P.S.
- 19 Davenport P.S./Carleton Village
25. Davisville P.S.
29. Dovercourt P.S.
33. Earl Beatty P.S.
34. Earl Grey P.S.
37. Eglinton P.S.
38. Essex P.S.
41. Forest Hill Jr. P.S.
41. Forest Hill Sr. P.S.
42. Frankland P.S.
43. Gabrielle Roy
44. General Mercer P.S.
45. Givens P.S.
46. Gledhill P.S.
47. Glen Ames P.S.
48. Glenview P.S.
52. Hillcrest P.S.
53. Hodgson P.S.
56. Hughes P.S.
57. Huron St. P.S.
58. Indian Rd. P.S.
59. Island P.S.
61. Jessie Ketchum P.S.

- 62. John Fisher P.S.
- 63. John Ross Robertson P.S.
- 64. John Wanless P.S.
- 65. Keele St P.S.
- 67. Kent P.S.
- 68. Kew Beach P.S.
- 70. King Edward P.S.
- 71. Leslie P.S.
- 72. Lord Dufferin P.S.
- 76. Maurice Cody P.S.
- 78. McMurrich P.S.
- 88. Oriole Park P.S.
- 89. Old Orchard P.S.
- 19 Osler P.S./Carleton Village
- 90 Palmerston P.S.
- 92. Park P.S.
- 93. Parkdale P.S.
- 94. Pauline P.S.
- 95. Perth P.S.
- 97. Queen Victoria P.S.
- 103. Rosedale P.S.
- 104 Runnymede P.S.
- 105. Ryerson P.S.
- 110. Swansea P.S.
- 47. Woodfield P.S.
- 115. Williamson Road P.S.
- 117. Winona P.S.

Toronto Board of Education Secondary Schools Responding:

Letters correspond to letters on map Figure 1, pp. 30

- A. Oakwood C.I.
- B. College St. Secondary
- C. Lawrence Park C.I.
- D. Bloor C.I.
- E. Brockton C.I.
- F. Danforth Tech
- G. Eastern Commerce Secondary
- H. Forest Hill Collegiate
- I. Malvern C.I.
- J. North Toronto C.I.

- K. Humberside C.I.
- L. Eastdale Secondary
- M. Harbord C.I.
- N. Parkview Secondary.
- o. Other

Appendix C

Full list of responses to question 25 with numbers of people with similar responses.

| | |
|---|-----------------------------------|
| Building snow caves | Rock climbing (4) |
| Dining room (3) | Making beds |
| Campfires (3) | First time away (5) |
| positive fog (3) | An Adventure (3) |
| Farm visit | Night hike (11) |
| Dance (2) | Hikes (17) |
| Social Atmosphere (6) | Learning about different cultures |
| Cook out lunch | x ski (11) |
| activities would not have a chance to do (13) | |
| Camp-out (4) | teachers (17) |
| learning so much | Orienteering (5) |
| journals | survival game (4) |
| snowshoeing | Stream study (5) |
| being outdoors (8) | water testing |
| wants child to go | Animal study (5) |
| wilderness walk (2) | tree planting |
| Plant study | friendships (18) |
| participation (2) | Responsibility (2) |
| interacting and learning about other students (6) | |
| Better behavior | Bird Banding (4- neg 1) |
| dorm life (6) | Smiles |
| ropes course (6) | bee keeping |
| Togetherness | maple syrup (4) |
| cable bridges (5) | Group challenges (11) |
| sawmill (2) | nurse |
| French vocabulary | bad food (2) good food (4) |
| throwing a javelin | Tree ID (3) |
| fish hatchery | hands on learning (6) |
| seeing nesting duck | Hike in the rain |
| having fun (7) | recreational activities (4) |
| interest in outdoor Ed (2) | trust between teacher & student |
| trust | sent home early (2) |
| visiting girls dorm (male) | Breaking window |
| Back to roots | Mud (2) |
| caving (2) | Warmth of place |

| | |
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| Music at the Boyne (4) | Archery (2) |
| falling in river (3) | night sounds |
| not wanting to go home | Passed on to child (3) |
| Town Study | support if needed |
| Important Program (2) | Low income |
| star gazing | learning about own teacher |
| appreciation of nature | woodlot study |
| Boots Full of Water | the great activities |
| Learning about environmental science and outdoor education | |
| pond study | 3 full meals |
| making ice cream | cutting down trees |

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